

PRELIMINARY DRAFT

TULARE COUNTY HAZARDOUS WASTE MANAGEMENT PLAN

**Tulare County Association
of Governments**

March 31, 1988

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**PRELIMINARY
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**TULARE COUNTY HAZARDOUS WASTE
MANAGEMENT PLAN**

Prepared Pursuant to the
**GUIDELINES FOR THE PREPARATION OF HAZARDOUS
WASTE MANAGEMENT PLANS**

California Department of Health Services
Toxic Substances Control Division
June 30, 1987

Prepared by
TULARE COUNTY ASSOCIATION OF GOVERNMENTS

March 31, 1988



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Adopted by the Board of
Supervisors by Resolution
No.

Date

Approved by the City of
Dinuba by Resolution No.

Date

Approved by the City of Exeter
by Resolution No.

Date

Approved by the City of
Farmersville by Resolution
No.

Date

Approved by the City of Lindsay
by Resolution No.

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Approved by the City of
Porterville by Resolution
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Approved by the City of Tulare
by Resolution No.

Date

Approved by the City of
Visalia by Resolution No.

Date

Approved by the California
Department of Health Services,
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Date

TABLE OF CONTENTS

	Page
Title Page.....	i
Acknowledgments.....	ii
Approvals/Adoption.....	iv
Table of Contents.....	v
List of Tables.....	viii
List of Figures.....	x
List of Maps.....	xi
Plan Contents Relative to the California Environmental Quality Act.....	xii
Executive Summary.....	xiii

Chapter

1.0	<u>Introduction.....</u>	1-1
1.1	Legal Context of the HWMP.....	1-1
1.2	Public Participation in the Planning Process.....	1-1
1.3	California Environmental Quality Act.....	1-2
1.4	Relationship of the HWMP to Other Planning Documents.....	1-2
1.5	Statement of Purpose.....	1-6
2.0	<u>Environmental Setting.....</u>	2-1
3.0	<u>Goals, Objectives, Implementation Measures, and Policies.....</u>	3-1
3.1	Public Education and Participation.....	3-2
3.2	Ongoing Data Collection and Analysis.....	3-3
3.3	Waste Reduction Implementation Program.....	3-4
3.4	Siting of Hazardous Waste Management Facilities.....	3-5
3.5	Transportation.....	3-6
3.6	Storage.....	3-7
3.7	Contaminated Sites.....	3-7
3.8	Small Quantity Generators.....	3-9
3.9	Household Hazardous Waste.....	3-9
3.10	Emergency Response.....	3-10
3.11	Regulations, Enforcement, and Surveillance.....	3-11
3.12	Organization and Responsibility.....	3-12
3.13	Funding.....	3-13
3.14	Plan Monitoring and Evaluation.....	3-14
4.0	<u>Current Waste Generation and Facility Needs Analysis.....</u>	4-1
4.1	Current Waste Stream Composition.....	4-1
4.1.1	Wastes Managed On-Site.....	4-2
4.1.2	Wastes Shipped Off-Site.....	4-2
4.1.3	Small Quantity Generators.....	4-2
4.1.4	Household Wastes.....	4-4
4.1.5	Contaminated Sites.....	4-9
4.1.6	Designated and Non-Hazardous Wastes.....	4-9

Chapter	Page
4.1.7 Wastes Imported and Exported.....	4-9
4.1.8 Summary of Current Waste Generation.....	4-11
4.2 Current Treatment Facility Needs Analysis.....	4-11
5.0 <u>Projected Hazardous Waste Quantities in the Year 2000 and Treatment Facility Needs.....</u>	5-1
5.1 Projected Waste Stream Composition.....	5-1
5.1.1 Wastes Managed On- and Off-Site.....	5-1
5.1.2 Small Quantity Generators.....	5-4
5.1.3 Household Hazardous Wastes.....	5-6
5.1.4 Contaminated Sites.....	5-10
5.1.5 New Waste Streams.....	5-13
5.1.6 Summary of Projected Waste Generation.....	5-14
5.2 Projected Treatment Facility Needs.....	5-14
5.2.1 Primary Treatment Methods.....	5-17
5.2.2 Incineration as an Alternative Treatment Method....	5-17
5.2.3 Residuals Repository.....	5-20
5.2.4 Transfer Station.....	5-20
5.2.5 Conclusions.....	5-20
6.0 <u>Hazardous Waste Reduction.....</u>	6-1
6.1 Hazardous Waste Reduction Defined.....	6-1
6.2 Techniques for Waste Reduction.....	6-2
6.3 Projected Industrial Waste Reduction.....	6-2
6.3.1 Large Quantity Generators.....	6-5
6.3.2 Small Quantity Generator.....	6-9
6.4 Source Reduction and Recycling Alternatives.....	6-9
6.5 Barriers to Waste Reduction.....	6-10
6.6 Incentives for Waste Reduction.....	6-10
7.0 <u>Siting Criteria for Hazardous Waste Management Facilities.....</u>	7-1
7.1 Introduction.....	7-1
7.1.1 Criteria Development Process.....	7-1
7.1.2 Variance from Criteria in State Guidelines.....	7-2
7.1.3 Criteria Format.....	7-2
7.1.4 Areas in Which Criteria Might be Met.....	7-2
7.1.5 Areas Excluded From Siting Consideration.....	7-2
7.2 Siting Criteria for Hazardous Waste Management Facilities.....	7-2
8.0 <u>Programs for Hazardous Waste Management.....</u>	8-1
8.1 Transportation.....	8-1
8.1.1 Designated Routes.....	8-3
8.1.2 Interstate Transportation.....	8-3
8.1.3 Facility Siting.....	8-3
8.2 Monitoring of Hazardous Waste Sites and Facilities.....	8-3
8.2.1 Inspections.....	8-4

Chapter		Page
	8.2.1.1 AB 2185 Inspections.....	8-4
	8.2.1.2 Underground Tank (UGT) Inspections.....	8-4
	8.2.1.3 Waste Generator Inspections.....	8-4
	8.2.2 Enforcement and Technical Assistance.....	8-5
8.3	Organizational Responsibilities for Implementation.....	8-5
8.4	Emergency Response Procedures for Hazardous Materials Incident.....	8-7
	8.4.1 General Situation.....	8-7
	8.4.2 Special Situations.....	8-8
	8.4.2.1 Transportation Systems.....	8-8
	8.4.2.2 Stationary Facilities.....	8-8
	8.4.2.3 Casualties.....	8-9
	8.4.2.4 Long-Term Relocation.....	8-9
	8.4.2.5 Water and Waste Systems.....	8-9
	8.4.3 Definitions.....	8-9
8.5	Storage Regulations.....	8-10
	8.5.1 Underground Storage Tanks.....	8-12
	8.5.2 Above Ground Storage.....	8-13
8.6	Contaminated Sites.....	8-13
	8.6.1 Location and Status.....	8-14
	8.6.2 Programs for Cleanup.....	8-15
	8.6.3 Land Use Controls.....	8-17
8.7	Small Quantity Generators.....	8-17
8.8	Household Hazardous Waste.....	8-18
8.9	Public Education and Participation.....	8-19
	8.9.1 Public Participation During Plan Development.....	8-19
	8.9.2 Public Participation and Plan Implementation.....	8-20
8.10	Ongoing Data Collection and Data Management.....	8-20
8.11	Funding.....	8-21
8.12	Plan Monitoring and Evaluation.....	8-23
9.0	<u>Environmental Impact Report</u>	9-1

Technical Appendices

(A)	Glossary.....	A-1
(B)	Department of Health Services Suggested Tables.....	B-1
(C)	Summary of Applicable State and Federal Laws.....	C-1
(D)	Contaminated Sites List (Accompanies Map No. 4).....	D-1
(E)	Correspondence Regarding the DRAFT Environmental Impact Report.....	E-1
(F)	Response to Comments.....	F-1
(G)	Sample Hazardous Waste Management Ordinance.....	G-1
(H)	Resolutions of Approval and Adoption.....	H-1

LIST OF TABLES
(continued)

Suggested Table	Page
E Quantities of Hazardous Waste Imported into the County in Current Year.....	B-6
G Commercial Hazardous Waste Storage Capacity and Activity in Current Year, Facility Name <u>Tulare Co Ag Comm.</u>	B-7
H On-Site Treatment/Disposal of Hazardous Waste in Current Year, Facility Name <u>Western Farm Service</u>	B-8
H On-Site Treatment/Disposal of Hazardous Waste in Current Year, Facility Name <u>B.P. Performance Polymers</u>	B-9
I Quantities of Hazardous Waste Shipped Offsite by Generators in Tulare County During 1986.....	B-10
J Major Industry Groups of Waste Generated and Shipped Offsite, Managed On-Site and Small Quantity Generators During 1986 in Tulare County.....	B-11
K Major Industry Groups of Waste Generated and Shipped Offsite, Managed On-Site and Small Quantity Generators Projected to Year 2000.....	B-14
L Projected Quantities of Cleanup Wastes.....	B-17
M Projected Quantities of New Hazardous Waste Streams.....	B-18
N Total Projected Quantities of Hazardous Waste Generation.....	B-19
O Projected Commercial Hazardous Waste Treatment Disposal Capacity in Tulare County.....	B-20
P Projected County Needs Assessment for Commercial Hazardous Waste Treatment Facilities.....	B-21
Q Projected Quantities of Residuals Generation.....	B-22

LIST OF FIGURES

Figure		Page
6-1	Types of Physical Techniques for Source Reduction and Waste Mangement.....	6-3
6-2	Types of Implementation Strategies for Source Reduction and Waste Management.....	6-4
8-1	Medical Emergency Action Checklist Response to Hazardous Material Incident.....	8-11

LIST OF MAPS

MAP NO.		Page
1	Location Map.....	2-2
2	County of Tulare.....	2-3
3	Routes for Transportation of Explosives.....	8-2
4	Contaminated Sites.....	Pocket

PLAN CONTENTS RELATIVE TO THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

This section will contain a detailed outline of the contents of the Plan pertinent to the requirements of the California Environmental Quality Act. It will be included in a version of the document to be release during the public review process which will be conducted between April 1 and June 30, 1988.

EXECUTIVE SUMMARY

A summary of the major findings and implementation measures will be incorporated into the final document at this location.

CHAPTER 1

INTRODUCTION

1.1 Legal Context of the HWMP

The Tulare County Hazardous Waste Management Plan has been prepared pursuant to Assembly Bill 2948 (Tanner, 1986) as amended, also known as the Tanner Process, and to the Guidelines for the Preparation of Hazardous Waste Management Plans as issued by the California Department of Health Services, Toxic Substances Control Division, on June 30, 1987.

This Plan, along with other county hazardous waste management plans, will in turn serve as the foundation for the development of the State Hazardous Waste Management Plan which is to be developed pursuant to Assembly Bill 650 (Tanner 1986).

State and federal legislation significant to hazardous waste management and planning is summarized in Appendix C. A few of the statutes warrant special recognition at this point in the document. The Federal Resource Conservation and Recovery Act (RCRA), the Hazardous and Solid Waste Amendments (HSWA) of 1984 and State statutes enacted in 1985 (SB 509, Carpenter and AB 1809, Sher) and 1986 (SB 1500, Roberti and AB 2948, Tanner) prohibit the land disposal of untreated hazardous waste after May 8, 1990. The Safe Drinking Water and Toxics Enforcement Act, known as Proposition 65, prohibits the discharge to drinking water of chemicals known to cause cancer or reproductive toxicity.

Failure to meet the management requirements of the 1986 amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) could threaten the receipt of federal Superfund moneys for the cleanup of designated Superfund sites within the State of California. This statute requires that California provide treatment or disposal capacity for hazardous waste generated within the state for a twenty year period beginning in November of 1989. Together, these laws mandate immediate and dramatic improvement in the way hazardous wastes are managed in the state and in the nation.

1.2 Public Participation in the Planning Process

This plan was prepared under the guidance of the Tulare County Hazardous Waste Management Advisory Committee. The committee has seventeen members representing the incorporated cities (3), the general public by Supervisorial District (5), affected industry (5), one (1) representative of an environmental group, one (1) person with expertise in engineering, one (1) with knowledge of geology, and one (1) with knowledge of water quality issues. The formation of the advisory committee was authorized by the Tulare County Board of Supervisors by Resolution 87-0561, on April 28, 1987. It is a standing committee with approximately half of the terms expiring every two years. Please refer to the Acknowledgments page for a listing of Committee members.

The statutory functions of the Committee are to (a) advise the county and cities regarding the development, approval and administration of the County Hazardous Waste Management Plan, and (b) inform the public by holding informational meetings and workshops during plan preparation.

The extensive efforts made by the Committee to foster public participation in the planning process are summarized in Chapter 8, Section 8.9.

1.3 California Environmental Quality Act

The contents of the HWMP relative to the California Environmental Quality Act (CEQA) will be summarized in the section immediately preceeding Chapter 1. As indicated, the requirements for the contents of an Environmental Impact Report (EIR) will be incorporated into the Plan. Primary work on the preparation of the environmental impact report (EIR), including the identification of impacts, mitigation measures, and compliance with the public review requirements of CEQA, will be undertaken following the release of the DRAFT HWMP on March 31, 1988, for public review.

1.4 Relationship of the HWMP to Other Planning Documents

As noted above, county plans serve as the foundation for the development of the State Hazardous Waste Management Plan. With regard to local planning, the county plan will also serve as the foundation for city hazardous waste management plans developed pursuant to SB 477 (B. Green, 1987). This statute requires each city within a county that has an approved County HWMP to adopt a city HWMP, incorporate the plan into the city's general plan, or enact an ordinance requiring that land use decisions be consistent with the Plan. Both the cities and the County must complete action in this regard within 180 days of approval of the Tulare County Hazardous Waste Management Plan by the California Department of Health Services.

The preparation of the HWMP was accomplished through the Tulare County Association of Governments. This was done to facilitate coordination of the Tulare County Hazardous Waste Management Plan with the general plans of both the County and the cities. The County of Tulare has expressed its intent to adopt the HWMP as a part of its General Plan as a component of the Safety Element. The individual incorporated cities have not indicated a preference for adoption of a HWMP or of an alternative ordinance.

The existing general plans of the cities and County were considered for consistency with the goals, objectives, policies, and implementation measures of this Plan. The depth to which safety/emergency procedures are discussed via Safety/Seismic Safety Elements varies greatly between jurisdictions. The cities do not directly address the siting of hazardous waste facilities within their existing general plans or zoning ordinances. Most address the introduction of hazardous wastes into their sewer collection systems through waste discharge ordinances. Existing approaches of the County and cities to hazardous waste management via their respective general plans and ordinance codes is as follows:

Tulare County

Tulare County's general plan addresses a number of policy areas associated with hazardous waste management. Among them are policies related to waste water management, water supplies and systems, pesticide use, sewer and drainage systems, solid waste management, geologic and seismic conditions, and emergency response. No existing policies were found to be in conflict with this Plan. However, further review would be beneficial during the public review period. Overlapping areas of policy can be identified and eliminated, if any, prior to adoption of a Hazardous Waste Management Component to the Safety Element of the Tulare County General Plan.

The Zoning Ordinance does not contain any references to transfer, storage, and treatment (TSD) facilities for hazardous waste management. The closest approximations in the Ordinance are the terms "waste and refuse disposal sites" and "solid waste recycling operation". The former type of land use is allowed in the A-1, AE, AE-10, AE-20, AE-40, AE-80, AF, and M-2 zones. All of the "A" zones are agricultural while M-2 is a heavy manufacturing classification. This type of use must be established under a special use permit. Recycling operations restrictions vary somewhat among zone classifications, but generally can be established under a special use permit in the AE-10, AE-20, AE-40, AE-80, A-1, AF, C-2, C-3, M-1, M-2, and AP classifications.

This ordinance, and all of the cities' ordinances reviewed, allows the development of small quantity generator (SQG) land uses in at least some of its commercial zone classifications.

Tulare County does not directly operate sewer collection or waste disposal facilities. It has facilitated the development of such facilities in a number of unincorporated communities. Operation of such facilities is the responsibility of the local special districts established to oversee their operation. Regulations regarding the discharge of hazardous substances into these systems are similarly managed.

Dinuba

There are no policies in the Dinuba General Plan (Land Use Element) that directly address issues of hazardous waste management.

No term directly related to transfer, treatment, storage, or hazardous waste disposal facilities is found in the zoning ordinance either in the M-1 (Light Manufacturing), M-1-X (Exclusive Light Manufacturing), or the M-2 (Heavy Manufacturing) classifications. However, a number of uses are identified as requiring conditional use permits that would generate hazardous materials including, but not limited to, auto wrecking and parts storage, blast furnaces or coke ovens, chemical manufacturing, explosives (manufacture or storage), and petroleum refining.

The disposal of waste material into the municipal sewer system is regulated by the Municipal Code, Chapters 13.40, 13.44, and 13.48. These ordinances establish waste discharge requirements that prohibit the introduction of hazardous materials and wastes into the sewer collection system, and that establish the conditions and procedures for determining the need for the installation of pretreatment facilities by specified businesses and industries.

Exeter

There are no policies in the Exeter General Plan (Land Use and Circulation Elements) that directly address issues of hazardous waste management.

The zoning ordinance contains only the M-L (Light Manufacturing) classification. No hazardous waste facilities such as those for transfer, treatment, storage or disposal are named in the ordinance code. However, land uses, both permitted and conditional, are allowed that could generate hazardous waste such as, but not limited to, cogeneration facilities, gasoline service stations, battery manufacture, boiler works, building materials manufacture, and ink manufacture.

The discharge of waste material into the municipal sewer system is controlled by the Exeter Ordinance Code, Chapter 13.28. The ordinance prohibits the introduction of hazardous substances into the public sewer system and also establishes pretreatment requirements.

Farmersville

The City's General Plan (Land Use Element) does not directly address issues of hazardous waste management. As do other community plans, it calls for enhancement and improvement of the community's environment in very general terms.

The zoning ordinance contains only the "I" (Industrial) Zone. No references to TSD facilities are made. Land uses that do generate hazardous wastes are permitted, in most cases only with the issuance of a conditional use permit. Examples include tannery or hide curing, wineries or distilleries, forges and foundries, and chemicals manufacturing, among others.

The discharge of waste to sewers is regulated under Chapter 13.08 of the Code of Ordinances. Sections 13.08.270 and 13.08.280 specifically prohibit the discharge of hazardous substances that may present a danger to health or to the operation of the waste treatment plant.

Chapter 10.60 of the Code of Ordinances, specifically Section 10.60.020, regulates vehicles containing toxic and/or hazardous substances. Unless a special permit is obtained from the Chief of Police, the ordinance makes it unlawful to have or park such vehicles within any residential area of the city. The prohibition applies to any material assigned an identification number in the United States Department of Transportation's Emergency Response Guidebook (DOT-P 5800.2).

Lindsay

The General Plan (Land Use and Circulation Elements) of the City of Lindsay does not address issues directly related to hazardous waste management.

The zoning ordinance includes the ML (Limited Industrial) and MG (General Industrial) classifications. Uses are permitted in both classifications that would generate hazardous wastes. Examples include electrical supply manufacture, gasoline service stations, and building materials manufacturing among others.

The discharge of hazardous substances to the municipal sewer system is prohibited under Ordinance No. 309B. Industrial waste discharges are subject to inspection by the City.

Porterville

The Land Use Element of the City's General Plan was reviewed. No direct reference to hazardous waste management issues was found.

The zoning ordinance contains both light and heavy manufacturing classifications. The City Planning Department furnished a portion of the M-2 classification standards related to "extra heavy uses". It does not include any reference to TSD facility types. Uses that would generate hazardous wastes are allowed by conditional use permit .

The City does enforce a sewage discharge ordinance (Article IV of the Porterville City Code) which prohibits the discharge of hazardous substances and that requires the issuance of waste discharge permits for certain types of chemicals.

Tulare

The policies of the Tulare General Plan (Land Use and Circulation Elements) do not directly address issues of hazardous waste management.

The zoning ordinance for Tulare contains both M-1 (Light Industrial) and M-2 (Heavy Industrial) classifications. Uses are permitted that do generate hazardous substances, including service stations, printing operations, battery manufacture, and precious metal reduction among others. The ordinance does not contain reference to TSD facilities.

A copy of the city's waste discharge ordinance was not available at this writing. However, it is understood that it does address the release of hazardous substances to the sewer system and addresses the pretreatment of industrial wastes.

Visalia

The City's Land Use and Circulation Elements do not directly address issues of hazardous waste management.

The City has adopted an ordinance (No. 8723) that addresses the release of hazardous materials to the environment. The ordinance sets forth emergency response procedures and establishes the basis by which costs incurred by the City for spill mitigation will be collected.

The City maintains a waste discharge ordinance relative to its sewer collection system and treatment works. Discharge standards are established for industrial wastes and permitting procedures are established.

No direct reference to TSD facilities was found in the zoning ordinance. As with the other cities, uses are permitted which would and do generate hazardous substances. Both M-1 and M-2 (Light/Heavy) classifications appear in the ordinance. The ordinance does contain conditions of approval that state that no use or process shall be permitted which would be injurious to persons working or residing in the vicinity of the proposed use.

Woodlake

The Woodlake Land Use Element does not contain direct reference to issues of hazardous waste management.

The zoning and waste discharge ordinances were not available for review at this writing.

Other Planning Documents

Other planning documents referenced during the development of the HWMP include the Tulare County Solid Waste Management Plan and the Multihazard Functional Plan. The latter plan has served as the basis for the emergency response discussion in Chapter 8. The Solid Waste Management Plan addresses the management of household hazardous waste only in very general terms noting that the Tulare County Environmental Health Division is the designated agency for enforcement, and that the County relies on out of county facilities for hazardous waste management.

1.5 Statement of Purpose

As expressed in the State Guidelines for Hazardous Waste Management Plans (page 3-1), "It is the intent of AB 2948 that the primary responsibility for land use decisions regarding the management of hazardous wastes falls on local government." In passing AB 2948, the Legislature indicated its intent (paraphrased):

1. To protect the quality of life of the citizens of the State of California.
2. To protect the public health, environment, and economic well being of the state from the increasing threat of illegal disposal and the use of out-moded disposal practices.
3. To provide an effective planning process that involves local and state governments, the public, and industry, and that, at the same time, insures that needed facilities are not dangerous to the public health and safety, and are not rejected because of local opposition.
4. To prevent hazardous wastes from being permanently disposed into land, or emitted into the air, without being processed by an economical and technically feasible alternative technology. Achievement of this goal will require the development of feasible programs for the reduction in the volume and hazard of hazardous wastes at their source, and the development of expanded recycling programs. Achievement of this goal also requires the development of residuals repositories as an alternative to the traditional methods of land disposal of hazardous wastes, recognizing that even the preferred technologies for the treatment of such wastes will leave some byproducts.
5. To provide for the strong enforcement of existing transportation related laws including the manifest system, vehicle safety, and emergency response preparedness.

6. To provide for the effective monitoring of the implementation of existing state and federal hazardous waste management laws and to meet the concerns of the public for full protection of the public health and the environment.
7. To assure the development of a system which provides for full compensation for injury and damage found to be caused by hazardous wastes.

Further, the Legislature declared that it is the responsibility of all Californians to share in finding safe and effective solutions to the management and disposal of hazardous wastes.

CHAPTER 2

ENVIRONMENTAL SETTING

Time has not permitted the drafting of Chapter 2 for inclusion in the PRELIMINARY DRAFT of the Tulare County Hazardous Waste Management Plan. However, a location map (see Map No. 2) and a generalized map of the County (see Map No. 3) are included on the following pages.

Environmental characteristics of Tulare County not already detailed in other chapters will be incorporated into this section of the Plan in a subsequent version of the document to be released during the public review process. Information such as a summary of soil types found within the county, general climatic conditions, major topographic characteristics, and other relative information will be incorporate.

Chapter 2 is germane to the Environmental Impact Report to be prepared pursuant to the California Environmental Quality Act, also known as CEQA.

TULARE COUNTY HAZARDOUS WASTE MANAGEMENT PLAN



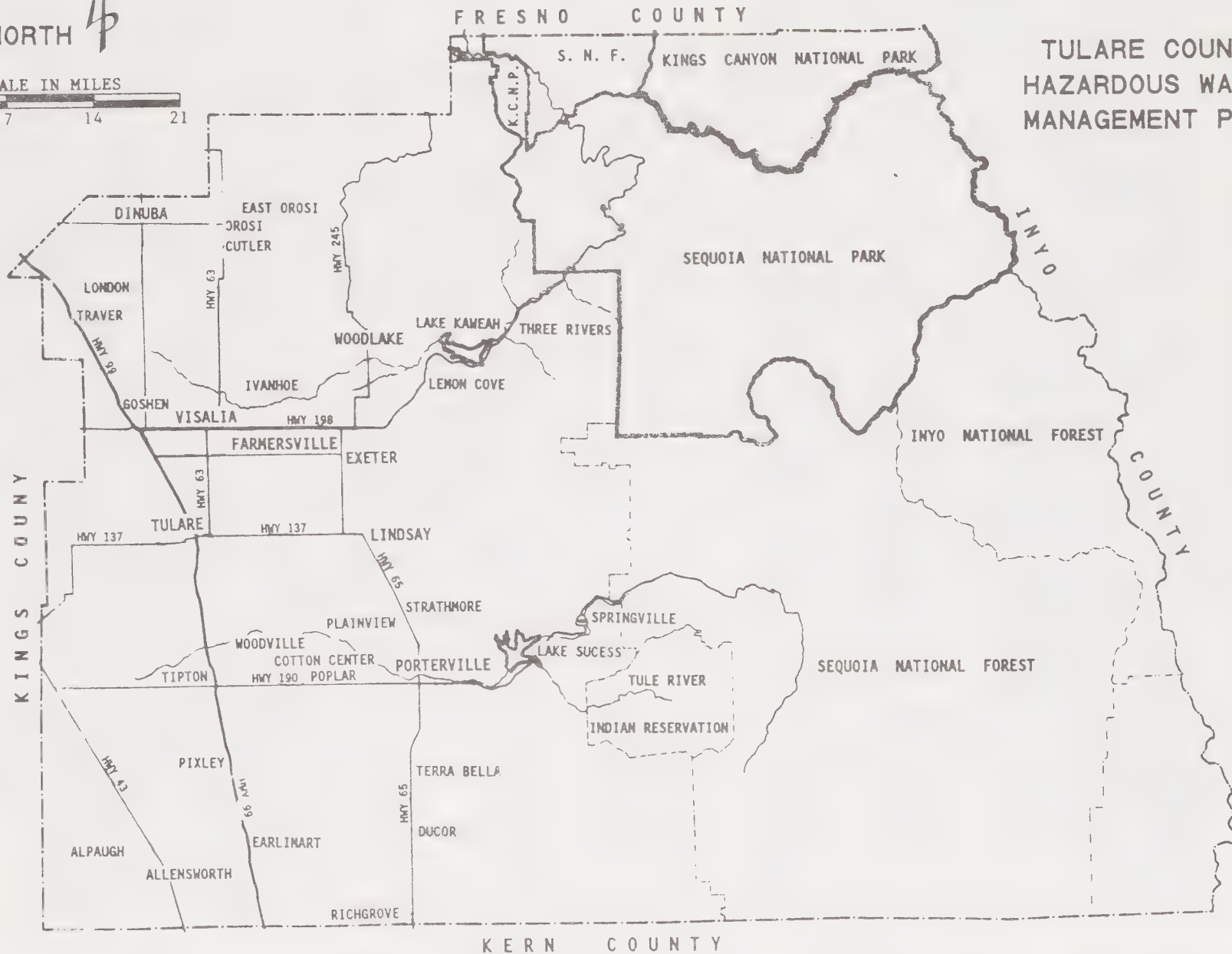
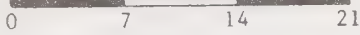
MAP No. 2
COUNTY OF TULARE

TULARE COUNTY
HAZARDOUS WASTE
MANAGEMENT PLAN

NORTH



SCALE IN MILES



CHAPTER 3

GOALS, OBJECTIVES, IMPLEMENTATION MEASURES AND POLICIES

According to the Guidelines for the Preparation of Hazardous Waste Management Plans (California Department of Health Services, Toxic Substances Control Division, June 30, 1988, page 3-1), "the primary goal of establishing a system for managing hazardous materials, including wastes, is to protect public health, safety, and welfare and maintain the economic viability of the planning area (Tulare County) and the State." The purpose of this chapter is to set forth goals, objectives, implementation measures and strategies, and policies specific to the County of Tulare that reflect the intent of this broadly stated goal of the Tanner Process.

For the purposes of this plan, the following definitions, adapted from the State of California General Plan Guidelines, 1987, have been used in the development of goals, objectives, implementation measures, and policies:

Goal: A goal is a general, not quantitative, statement of purpose. It is a general expression of community values and, therefore, is abstract in nature. Consequently, a goal is generally not quantifiable, time dependent or suggestive of specific actions for its achievement.

Objective: An objective is a specific end, condition or state that is an intermediate step toward attaining a goal. It should be achievable and, when possible, measurable and time-specific. An objective may only pertain to one particular aspect of a goal or it may be one of several successive steps toward goal achievement. Consequently, there may be more than one objective for each goal.

Implementation Measure: An implementation measure is an action, procedure, program or technique that carries out the intent of a goal and its sub-objective(s). The agency or agencies specifically responsible for the action specified are identified in the implementation measure.

Policy: Policies, similar to implementation measures, represent commitment to a course of action and are also used to establish standards and guidance by which the jurisdiction makes decisions.

The contents of this chapter grew out of the analysis contained in the balance of this planning document and from the numerous meetings of the Tulare County Hazardous Waste Management Advisory Committee and are meant to address hazardous waste management facility and program needs to the year 2000. Its broad purposes are to insure that public education and participation in the management process is effectuated; that the generation of hazardous waste is reduced and minimized where possible; that adequate opportunity is provide for the siting of hazardous waste management facilities while maintaining maximum protection of the environment, public health, and safety; that there will be local and regional coordination of hazardous waste management programs; and that an adequate information base is established upon which to base future efforts to update the planning process and to support local decision making.

3.1 Public Education and Participation

Goal:

To make the public aware of its responsibility for involvement and participation in the management of hazardous wastes.

Objectives:

- A. Within twelve months of adoption of the Tulare County Hazardous Waste Management Plan (HWMP), a public information program will be established.
- B. Within one to three years of adoption of the HWMP, curricula shall be developed and implemented in school districts throughout Tulare County. Such curricula shall be permanently maintained and will address the broad spectrum of hazardous waste management issues including the effects of waste generation and disposal on the environment, sources of waste generation, and opportunities for waste reduction and minimization, including but not limited to the management of household hazardous wastes. Such curricula should address not only the need for governmental action, but also the need for individuals to take action to reduce and to minimize the generation of hazardous waste on a day-to-day basis.

Implementation Measures:

1. The Tulare County Division of Environmental Health, in cooperation with other appropriate county agencies and municipal governments, will establish a speakers bureau and maintain a list of speakers with knowledge of issues and programs related to hazardous waste management and shall inform news media outlets, cities, and chambers of commerce within the County of its availability at least semiannually.
2. At least semiannually, the Division of Environmental Health will publish news releases to inform the public as to the existence of hazardous waste management programs, progress made toward the remedial clean up of contaminated sites and in the implementation of the goals, objectives and policies of this plan.
3. With the support of the Tulare County Planning and Development Department and the Division of Environmental Health, the Tulare County Hazardous Waste Management Advisory Committee will encourage all school districts within the county to establish hazardous waste management curricula.
4. Using the members of the Tulare County Hazardous Waste Management Advisory Committee as a nucleus, and working with the staffs of the incorporated cities, the aforementioned agencies will work to establish citizens groups within each city. Such groups will encourage and participate in the local implementation of safe and effective hazardous waste management practices and public education efforts.

3.2 Ongoing Data Collection and Analysis

Goal:

Development of a data management system consistent with the State Guidelines for the Preparation of Hazardous Waste Management Plans (June 30, 1987, page 3-22) which identifies the types of wastes generated within Tulare County.

Objectives:

- A. Development of a hazardous waste data management system by the Tulare County Division of Environmental Health within twelve months of approval of the HWMP by the California Department of Health Services.
- B. Development of hazardous material and waste discharge data bases by the incorporated cities and sanitation districts within Tulare County within twelve months of approval of the HWMP by the California Department of Health Services.

Implementation Measures:

- 1. Identify all generators of hazardous waste (1000 kg. or below per month), their Standard Industrial Classification (SIC) code and their location.
- 2. Describe in detail the materials flow of the largest generators.
- 3. Review the status and structure of the State data management system on an ongoing basis in order to insure mutual compatibility of the local and state programs.
- 4. As the information clearinghouse, the Tulare County Division of Environmental Health, with assistance from the Tulare County Planning and Development Department, the Office of the Agricultural Commissioner/Sealer, and other local jurisdictions and agencies as appropriate, will annually evaluate the data collected to insure that the implementation of the HWMP is progressing and to identify needed revisions to hazardous waste management programs. This report will be presented to the Tulare County Hazardous Waste Management Advisory Committee for its consideration, review, and recommendations.
- 5. The Tulare County Division of Environmental Health will assist cities and sanitation districts in the development of data bases to monitor the disposal of hazardous wastes in wastewater within Tulare County.
- 6. The Tulare County Air Pollution Control District will provide annual reports to the Division of Environmental Health, Hazardous Materials Unit, that estimate discharges of hazardous materials (quantity and type) to the air.
- 7. The Tulare County Division of Environmental Health will share, at least annually, locally available waste generation and disposal data with counties receiving hazardous waste from Tulare County and with counties disposing of hazardous wastes in Tulare County.

3.3 Waste Reduction Implementation Program

Goal:

Operation of an effective waste reduction program by Tulare County and its cities.

Objectives:

- A. Participation in waste reduction programs by eighty percent of those firms that manifest wastes within five years of HWMP adoption.
- B. Minimize waste generation by new businesses and industries locating in Tulare County beginning immediately.
- C. To make technical assistance regarding waste reduction available to local business and industry within eighteen months of adoption of the HWMP.
- D. The development of solutions to the problems associated with the disposal of outdated and banned agricultural chemicals and pesticides.

Implementation Measures:

1. Working in conjunction with other appropriate county agencies, the incorporated cities, state and federal agencies, and private enterprise, the Tulare County Division of Environmental Health will establish and implement a coordinated waste reduction program within eighteen months of adoption of the HWMP.
2. The Division of Environmental Health will assist local business and industry in obtaining information needed to conduct waste stream audits and economic evaluations, and will, where feasible, provide technical assistance for that purpose on an ongoing basis.
4. The Tulare County Planning and Development Department, and the planning departments of the incorporated cities within the County, will immediately adopt, into their respective zoning ordinances, the use of a standard condition of approval for all commercial and industrial land use permits which requires such enterprises to certify that they are minimizing the generation of hazardous waste through the use of the best available technology within their manufacturing, service commercial, and/or product development processes. Such certification shall be provided by the developer to the respective jurisdiction prior to the issuance of any building permit(s).
5. The Tulare County Association of Governments, and its member agencies, will work jointly with the farming community, including the Tulare County Farm Bureau and the office of the County Agricultural Commissioner to develop solutions to problems associated with the disposal of outdated and banned agricultural chemicals and pesticides by bringing relevant issues to the attention of the state and federal governments on an ongoing basis.

3.4 Siting of Hazardous Waste Management Facilities

The reader is referred to Chapter 7, Siting Criteria for Hazardous Waste Management Facilities, in which policies specific to site evaluation are presented. This section of Chapter 3 sets forth the procedures for local implementation of the siting process.

Goal:

To allow for the development of on- and off-site hazardous waste management facilities sufficient to meet the hazardous waste management needs of Tulare County subject to the adopted siting criteria.

Objectives:

- A. The adoption of siting criteria for hazardous waste management facilities by each of the incorporated cities and by Tulare County within 180 days of approval of the HWMP by the State Department of Health Services.
- B. The adoption of zoning regulations, within ninety days of adoption of siting criteria, by Tulare County and each of the incorporated cities, which will allow the siting of hazardous waste management facilities.
- C. Coordination of siting and of facility needs evaluations with adjacent counties and counties in which hazardous wastes generated within Tulare County are disposed or otherwise stored, treated, or recycled. Coordination will be sought from counties utilizing hazardous waste management facilities located in Tulare County.

Implementation Measures:

1. Tulare County and each of the incorporated cities will adopt siting criteria for hazardous waste management facilities into their respective general plans. Such action may also take the form of adoption of a new ordinance code per the requirements of AB 2948 (Tanner, 1986) and SB 477 (B. Green, 1987).
2. Whether by ordinance or by amendment to the general plan, The Tulare County Planning and Development Department will recommend to the Planning Commission that a hazardous waste facility (HWF) zoning classification be created within the zoning ordinance. As reflected in the discussions in Chapter 7, it is not intended that this zone be preapplied to zoning maps, but that the classification exist for the purposes of evaluating the suitability, using the siting criteria, of a particular site for the development of a hazardous waste management facility. Concurrent with, or subsequent to, the consideration/approval of a change of zone application, a special use permit application would be considered and would contain, among other information, conditions of approval intended to protect the public health and safety and the quality of the environment.
3. Each incorporated city within Tulare County will amend its zoning ordinance to allow for the siting of hazardous waste management facilities. Prior to amending its ordinance, each city will evaluate its ordinance to determine the appropriate zone(s) in which to allow the consideration of the siting, by special/conditional use permit, of hazardous waste facilities. Such evaluations will consider the appropriateness of siting the

various types of hazardous waste management facilities including residuals repositories, recycling, storage, transfer, or treatment facilities in heavy and or light industrial zone classifications.

4. The Tulare County Department of Environmental Health and the Tulare County Planning and Development Department will meet with other interested counties within the San Joaquin Valley region to determine the feasibility of completing combined facility needs analyses and common siting criteria in advance of the first updating of the Tulare County Hazardous Waste Management Plan.
5. The Tulare County Planning and Development Department and the incorporated cities within Tulare County will work to achieve effective coordination with the State Office of Permit Assistance and other responsible agencies in the implementation of the permit review and issuance processes outlined in Article 8.7, Chapter 6.5 of Division 20 of the California Health and Safety Code.

3.5 Transportation

Goal:

Safe transportation of hazardous materials and hazardous wastes within Tulare County.

Objectives:

- A. Hazardous materials and wastes shall be transported in Tulare County in full compliance with applicable local, state, and federal laws.
- B. Transportation of hazardous materials or wastes should be prohibited on roads where the public health would be unduly threatened.

Implementation Measures:

1. Within one year of approval of the Tulare County Hazardous Waste Management Plan, Tulare County, with coordination through the Tulare County Hazardous Waste Policy Committee, and individual cities working through the appropriate city department, will evaluate existing hazardous material and waste transportation practices and will recommend actions, where needed, to achieve compliance or the maintenance of compliance with state and federal regulations, to their respective legislative bodies and departments.
2. The Hazardous Materials Unit within the Division of Environmental Health, working with the Tulare County Department of Public Works and the Tulare County Department of Planning and Development, will monitor the enforcement of both state and federal transportation regulations related to hazardous waste and materials on an ongoing basis, and will annually submit written reports in this regard to the legislative bodies of the cities and the county.

3. The Tulare County Planning and Development Department, working with the Tulare County Department of Public Works and the Hazardous Materials Unit within the Division of Environmental Health, will evaluate routes designated under Article 1, Subchapter 6 (Hazardous Materials), beginning with Section 1150 Title 13 of the California Administrative Code (CAC) to determine if routes and stopping points are appropriately designated. This evaluation will be completed within twenty four months of approval of the Tulare County Hazardous Waste Management Plan. Coordination of this effort through the Tulare County Association of Governments should be considered.

3.6 Storage

Goal:

The safe storage of hazardous materials and wastes.

Objectives:

- A. Development and ongoing maintenance of an accurate and complete data base of all sites within Tulare County where hazardous materials and wastes are stored.
- B. To insure that all responsible parties maintain accurate inventories of hazardous materials and wastes in storage and that they comply with applicable notification requirements when releases of such materials occur.

Implementation Strategies:

1. The Hazardous Materials Unit of the Tulare County Division of Environmental Health will continue to implement Chapter 6.7, Division 20, of the California Health and Safety Code regarding the permitting and monitoring of underground storage tanks.
2. The Hazardous Materials Unit will continue to implement Chapter 6.95, Division 20, of the Health and Safety Code regarding the inventorying and inspection of above ground storage facilities, including above ground tanks.
3. The Hazardous Materials Unit, working with the Tulare County Planning and Development Department, will establish and maintain a computerized data base (inventory) of stored hazardous substances pursuant to Chapter 6.95, Division 20, of the Health and Safety Code. The two agencies will work together to facilitate access to this data base by fire and other appropriate emergency service responders operating within Tulare County and the incorporated cities.

3.7 Contaminated Sites

Goal:

Cleanup of all known and yet to be discovered contaminated sites within Tulare County.

Objectives:

1. Development of adequate funding sources, on an ongoing basis, to address the cleanup of contaminated sites.
2. Cleanup of each contaminated site within five years of its identification.
3. Minimization of the amount of wastes shipped off-site.

Implementation Measures:

- A. Tulare County, through the Hazardous Materials Unit, shall continue to actively participate in efforts to assess and to clean up sites which have been contaminated.
- B. The Hazardous Materials Unit, Tulare County Division of Environmental Health, will recommend, within six months of approval of the HWMP by the State Department of Health Services, to the Tulare County Board of Supervisors that it adopt a cost recovery ordinance for the recovery of costs incurred as a result of participation in site mitigation and cleanup, both emergency and non-emergency. Those cities which have not already adopted a cost recovery ordinance shall do so within one year of approval of the HWMP.
- C. Tulare County, and the incorporated cities, independently and working through the Tulare County Association of Governments will support legislation, on an ongoing basis, to improve local access to State and Federal Superfunds for the cleanup of "orphan" sites.
- D. Tulare County, and the incorporated cities, working through associations such as the Environmental Health Directors Association of California, the County Supervisors Association of California, the League of California Cities, and other organizations as appropriate, will immediately begin to encourage the implementation of a coordinated site mitigation and cleanup process. All agencies having jurisdiction over such processes, whether State or Federal, and the legislative branches of the two levels of government will be asked to participate in this effort.
- E. The Hazardous Materials Unit, working with the planning agencies of the cities and with the Tulare County Planning and Development Department, will establish an ongoing mechanism for the notification of each jurisdiction as to the location of all contaminated sites within its boundaries within one year of approval of the HWMP.
- F. The Hazardous Materials Unit, working with the planning agencies of the cities and the County and with the Tulare County Assessor's Office and title companies, will establish a mechanism by which to monitor the transfer of ownership or change in occupancy of industrial or commercial properties known to be contaminated within two years of approval of the HWMP. The intent of this program will be to ensure that contaminated sites are mitigated before changes in land use are allowed or new structures built.
- G. The Hazardous Materials Unit, on an ongoing basis, will encourage on-site remediation of contaminated sites in order to minimize the amount of wastes disposed in landfills or transported to off-site incinerators.

3.8 Small Quantity Generators

Goal:

Full participation in the management of hazardous wastes by small quantity generators.

Objective:

1. Technical assistance, education and inspection programs shall be structured so as to consider the needs of small quantity generators.

Implementation Measures:

- A. Within two years of approval of the HWMP, and every three years thereafter, the Hazardous Materials Unit of the Division of Environmental Health will survey (sample) small quantity generators to determine their level of participation in waste management programs and practices in order to better structure its programs for assistance and waste reduction. Analysis contained in this plan indicates that the greatest current need for waste management among small quantity generators is in the recovery and proper handling of petroleum waste (waste oil, cutting oil and lubricants).
- B. The Tulare County Department of Public Works, within three years of approval of the HWMP, will add small quantity generators to its collection day program for household hazardous wastes, if studies determine that to be feasible.
- C. The Tulare County Planning and Development Department, and the planning departments of the cities, will consider the needs of small quantity generators as part of the needs analysis for any facility siting proposal.

3.9 Household Hazardous Wastes

Goal:

Reduce the improper disposal of household hazardous wastes.

Objectives:

- A. Reduction in the amounts of household hazardous wastes being disposed of in sanitary landfills by ten percent within three years of adoption of the HWMP.
- B. Reduction in the amounts of household hazardous wastes being disposed of in sanitary landfills by twenty percent within six years of adoption of the HWMP.

Implementation Measures:

1. The Tulare County Public Works Department, as the lead agency, and the incorporated cities within the county, will establish a household hazardous waste collection program within twenty four months of adoption of the HWMP. In the designing of programs, consideration should be given to the

establishment of permanent collection facility(ies) and of home collection service(s).

2. The Tulare County Public Works Department will make charts and brochures available to the public on an ongoing basis regarding the home use and disposal of hazardous materials including the substitution of nonhazardous products for hazardous ones.
3. To complement governmental efforts, the Tulare County Public Works Department will encourage non-government funded household hazardous waste collection days.

3.10 Emergency Response

Goal:

Maintenance and protection of public health and of the environment.

Objectives:

- A. The implementation and maintenance of emergency programs that prevent emergency incidents and that ensure response to accidental and illegal hazardous material discharges to the environment.
- B. The public education and technical assistance programs outlined in this Plan shall include components that address the need for both prevention programs and emergency response plans.

Implementation Measures:

1. County and city fire officials working jointly, will complete a study of the feasibility of establishing a fully equipped emergency response unit in Tulare County within one year of approval of the HWMP. Provision will be made for such a response unit within three years of approval of the HWMP, whether by the establishment of such a unit by jurisdictions wholly within Tulare County and/or by cooperative agreement with Kings, Kern, Fresno and/or Inyo County.
2. The Tulare County Division of Environmental Health (Hazardous Materials Unit) and the cities within the County will conduct annual evaluations of their respective emergency response plans (AKA Multihazard Functional Plans).
3. With the Tulare County Department of Health acting as the coordinating agency, responsible agencies and organizations within Tulare County will conduct an emergency response exercise at least annually and will make indicated improvements to their emergency response procedures.
4. The Tulare County Planning and Development Department and the planning departments of the cities will immediately recommend to their respective legislative bodies that all applicants for the siting of new facilities generating, treating, or disposing hazardous wastes be required to submit emergency response plans which meet the requirements of State and federal

laws (AB 2185/2187, SB 3777, and SARA Title III), including Risk Management and Prevention Plans or Community Hazard Assessments if extremely hazardous materials will be present at the facility.

3.11 Regulations, Enforcement, and Surveillance

Goal:

Vigorous surveillance and enforcement of laws and regulations pertaining to the management of hazardous materials and wastes.

Objectives:

1. In seeking compliance, enforcement agencies should first emphasize education, technical assistance, and voluntary cooperation and pursue enforcement and/or legal action only when this approach fails.
2. Elimination of unnecessary duplications in laws and regulations pertaining to the management of hazardous materials and wastes and the clean up of contaminated sites.

Implementation Measures:

- A. The federal, State, and local agencies and organizations most commonly recognized as having enforcement and surveillance responsibilities include the following:
 1. United States Environmental Protection Agency
 2. State Department of Health Services
 3. State and Regional Water Quality Control Boards
 4. California Waste Management Board
 5. California Highway Patrol
 6. California Department of Transportation
 7. Tulare County Department of Health Services
 - Office of Emergency Services
 - Division of Environmental Health
 - Hazardous Materials Unit
 - Air Pollution Control District
 8. Tulare County and Eight City Planning Agencies
 9. Eight City Public Works Departments, Sewer Services Divisions
 10. City Fire Departments and the California Division of Forestry
 11. Tulare County Public Works Department, Solid Waste Landfills
 12. Tulare County Agricultural Commissioner
 13. Numerous Special Purpose Districts operating Water Systems and/or Sewer Treatment Works
 14. Police and Sheriff departments

Tulare County and the incorporated cities will practice and encourage cooperation and coordination between these agencies on an ongoing basis. Aspects of the HWMP for which these agencies bear surveillance and enforcement responsibilities include but may not be limited to the following:

1. Transportation including route restrictions, placarding, and safety regulations

2. Land use including zoning restrictions and conditions, the use of contaminated sites, and adherence to general plan policies
 3. Storage of hazardous materials and wastes both above and below ground
 4. Waste reduction and minimization programs and enforcement
 5. Waste discharge to community sewer systems and treatment works
 6. Contamination of public and private water systems and wells
 7. Cleanup of contaminated sites
 8. Illegal disposal or discharge to air, land, or water
 9. Monitoring of treatment and disposal facilities
 10. Evaluation and implementation of emergency response procedures
- B. The Division of Environmental Health, Hazardous Materials Unit, shall continue, and expand where appropriate, its inspection and enforcement programs under AB 2185, its underground tank inspection program, and its Memorandum of Understanding with the State Department of Health Services regarding the regulation of small quantity generators.
- C. Tulare County and the incorporated cities will work jointly on an ongoing basis to identify and to eliminate unnecessary duplication of regulations and of surveillance and enforcement activities of the agencies listed above.

3.12 Organization and Responsibility

Goal:

Coordinated and cost efficient implementation of the Tulare County Hazardous Waste Management Plan.

Objective:

Ongoing close cooperation and coordination among all hazardous materials and waste programs, and among the responsible agencies and organizations charged with the implementation of the HWMP.

Implementation Measures:

- A. The Tulare County Division of Environmental Health, Hazardous Materials Unit, will act as the coordinating agency within the County for the implementation of the Tulare County Hazardous Waste Management Plan. Planning and organizational assistance will be provided by the Tulare County Planning and Development Department.
- B. Responsible agencies named in the objectives, implementation measures, and policies of this plan will bear the primary responsibility for the implementation of those tasks assigned to them.
- C. On an ongoing basis and in its capacity as the coordinating agency, the Hazardous Materials Unit will monitor actions by the responsible agencies in an attempt to avoid duplication of effort.

3.13 Funding

Goal:

Full implementation of the Tulare County Hazardous Waste Management Plan.

Objectives:

1. Development and maintenance of funding sources, on an ongoing basis, sufficient for implementation of the Tulare County Hazardous Waste Management Plan.

Implementation Measures:

- A. As part of a technical assistance program to be established within eighteen months of approval of the HWMP, the Hazardous Materials Unit will provide a list of alternative funding mechanisms for the implementation of waste reduction measures by small quantity generators. The Unit will provide only a list of alternative mechanisms, but will not provide financial consultation services to businesses.
- B. Agencies and organizations assigned responsibility in this chapter will, whenever possible, establish new programs on a user fee basis. In this regard, the Hazardous Materials Unit already operates user fee based programs for underground and above ground tank inspection programs and, pursuant to AB 2185, collects fees from small businesses for permits and inspections for those that store and use hazardous materials. The consolidation of fees should be considered where feasible. The public water system inspection program is also supported with user fees. The municipal refuse collection fee and landfill and transfer tipping fees are a potential sources of revenue for the implementation of household hazardous waste collection and public education programs.
- C. Agencies and organizations assigned responsibility in this chapter will consider the costs of plan implementation during the annual preparation of their respective budgets.
- D. The Hazardous Materials Unit will act on an ongoing basis as a clearing-house for general information regarding State and federal grants and loans available to both the private and public sectors for hazardous waste reduction, minimization, and site mitigation.
- E. Tulare County and the incorporated cities will work jointly, through the Tulare County Association of Governments, on an ongoing basis to establish new sources of planning and program funding at the State and a federal levels. This effort will include the development of adequate funding under the State and federal Superfund programs.
- F. In the event that the establishment of an off-site multiuser hazardous waste management facility is proposed for siting in Tulare County, the Tulare County Counsel's Office will evaluate the procedures under which the County could levy up to a ten percent "gross receipts tax" as permitted by Section 25173.5 of the Health and Safety Code (AB 2948, Tanner, 1986). Should such a facility be proposed for siting within an incorporated city, the legal counsel for the affected city will conduct the necessary evaluation.

3.14 Plan Monitoring and Evaluation

Goal:

Effective implementation of the Tulare County Hazardous Waste Management Plan.

Objective:

1. To ensure the ongoing usefulness and relevance of the Tulare County Hazardous Waste Management Plan, annual evaluations of progress toward its implementation will be conducted by the Tulare County Hazardous Waste Management Advisory Committee.

Implementation Measures:

- A. The Hazardous Materials Unit of the Tulare County Division of Environmental Health and the Tulare County Planning and Development Department will together report annually to the Tulare County Hazardous Waste Management Advisory Committee regarding progress made in implementing the Tulare County Hazardous Waste Management Plan. This report will be made at least one month in advance of the anniversary date of the approval of the HWMP by the State Department of Health Services.
- B. In its capacity as an advisory body to the Tulare County Board of Supervisors, the City Councils, and their respective staffs, the Tulare County Hazardous Waste Management Advisory Committee will on at least an annual basis recommend actions to improve the implementation of the goals, objectives, implementation measures, and policies of this Plan, and may also address other pertinent topics.
- C. If the evaluation of the HWMP by the Advisory Committee results in the recommendation that the Plan be updated, the Tulare County Planning and Development Department and the Hazardous Materials Unit will jointly estimate the extent and costs of the work, will identify alternative funding sources, and will recommend whether the update should be a joint undertaking of the County and cities. The evaluation completed on the third anniversary of approval of the Plan by the State Department of Health Services shall include an assessment of the need to complete an update.

CHAPTER 4

CURRENT WASTE GENERATION AND FACILITIES NEEDS ANALYSIS

The objectives of this chapter are to present current characteristics of the Tulare County hazardous waste stream and to identify the necessary facilities to manage current waste production.

The total Tulare County hazardous waste stream was estimated from data on wastes shipped off-site, small quantity generators (SQG), and households. It should be noted that the existing data base concerning hazardous waste generation and management is limited. Despite these deficiencies, however, the waste generation estimate is of sufficient accuracy to provide a data base for future planning purposes.

Several inconsistencies within the data can cause waste stream composition errors. The data base was created by the California Department of Health Services (DHS) from information listed on Hazardous Waste Manifest forms. These forms are often completed by individuals not directly associated with generation of the waste and errors occur.

Another error which is inherent to the system involves double counting of waste. This can occur when small quantity generators who properly manifested their wastes, are included in two categories, quantities of waste shipped off-site and also under SQG estimates. Finally, the quantities of wastes generated by small quantity generators and households can only be estimated. Updates to the data base will be incorporated into plan revisions.

The report is divided into two sections, current waste stream composition and current treatment facility needs. The investigation into the current waste stream composition is further divided into discussions on each of seven waste categories and a summary. Each category, as required by DHS to define the current hazardous waste stream, is described in terms of specific waste types and generated quantities. The section is concluded with a brief summary of the waste stream composition. Current treatment facility needs are discussed in the final section. This section includes analysis of facilities necessary to manage hazardous waste currently produced within the county and economic feasibility recommendations. Tables suggested by the DHS are included in Appendix B.

4.1 Current Waste Stream Composition

The DHS requires that the analysis of the current hazardous waste stream consider wastes: shipped off-site and managed on-site, from small quantity generators, households and contaminated sites, and designated wastes, special wastes, imported and exported wastes. Each of these segments of the Tulare County waste stream are discussed individually.

4.1.1 Wastes Managed On-site

A significant portion of the current hazardous waste stream is included in the wastes managed on-site category. These wastes were identified in a DHS letter received by Tulare County on 24 November 1987. The letter described capacity summaries for noncommercial hazardous waste facilities and waste quantities treated or disposed in 1986 at noncommercial facilities.

Results indicate that wastes managed on-site totaled nearly 840 tons or 8 percent of 1986 hazardous waste stream. The entire waste volume consists of one waste group, metals containing liquids, created by a single generator. Generated wastes were managed using an on-site aqueous treatment metals/neutralization facility (see Appendix B - suggested Table H).

4.1.2 Wastes Shipped Off-Site

A major component of Tulare County's current hazardous waste stream is waste manifested and shipped off-site by manufacturing and service industries. This waste includes quantities identified in the Hazardous Waste Information System data sheets and hazardous waste managed by route service haulers. Together these wastes totaled approximately 4,066 tons, or nearly 38 percent of the 1986 waste stream. Quantities of hazardous waste shipped off-site by individual waste group are shown in Table 4-1, page 4-3.

Wastes shipped off-site accounted for 4,065.59 tons or nearly 38 percent of the Tulare County hazardous waste stream. The majority of wastes shipped off-site, 2,424.88 tons, were the result of site remediation projects. These wastes are further described under the contaminated sites category.

The remaining 1,641 tons of hazardous wastes were generated by 14 large industries. Large quantity generators are defined as those who generate over 1,000 kilograms of hazardous waste per month. Representative industries include printing, agricultural, manufacturing, service related and electronic companies. The manufacturing sector generated nearly 700 tons of waste or approximately 40 percent of this total. Printing industries followed manufacturing in waste generation, contributing nearly 500 tons or 30 percent to the waste stream. Electronics, agricultural and service industries accounted for the remaining 441 tons of waste or nearly 30 percent of the total industrial waste stream.

4.1.3 Small Quantity Generators

Small quantity generators (SQG's) are regulated by Tulare County following a Memorandum of Understanding (MOU) with the State of California. Within Tulare County small quantity generators are defined as those businesses which generate quantities of hazardous waste less than 1,000 kilograms per month.

Data on hazardous wastes generated by SQG's is not available in Tulare County, but estimates were calculated using Method 3 described in the Technical Reference Manual (TRM) of the Guidelines for the Preparation of Hazardous Waste Management Plans written by the California Department of Health Services. Using a county business list and Attachment A from Part F of the TRM, small quantity generators were arranged into industry groups. The Department

TABLE 4-1

QUANTITIES OF HAZARDOUS WASTE SHIPPED OFF-SITE¹ DURING
1986 BY GENERATORS IN TULARE COUNTY

<u>Waste Group</u>	<u>Total Quantity of Manifested Waste Shipped Off-Site (tons)</u>	<u>Percentage of Off-Site Waste</u>
Non-halogenated organic sludges and solids	2144.48	52.7
Contaminated soil	756.54	18.6
Metal-containing liquids	333.68	8.2
Oily sludges	269.97	6.7
Non-halogenated solvents	247.68	6.1
Pesticides	109.79	2.7
Non-metallic inorganic liquids	73.27	1.8
Waste oil	54.16	1.3
Miscellaneous wastes	29.22	0.7
Halogenated solvents	26.97	0.7
Organic liquids	8.31	0.2
Dye and paint sludges and resins	8.10	0.2
PCB's and dioxins	1.95	0.05
Metal-containing sludges	1.47	0.04
Cyanide and metal liquids	---	---
Halogenated organic sludges and solids	---	---
Non-metallic inorganic sludges	---	---
TOTAL	4065.59	99.99

1 Quantities derived from DHS Hazardous Waste Information System data sheets and additional data identified by the Toxic Substances Control Division concerning hazardous waste managed by route service haulers.

of Health Services has assigned each industry group a hazardous waste production factor dependent upon each industry's product or service. The total volume of hazardous waste generated by each group was determined by multiplying the production factor by the number of businesses within the industry group. The DHS has also identified specific waste types and their respective quantities, in percent, generated by business operations. The volume of each waste type was calculated by multiplying the total volume of hazardous waste generated within each industry group by its respective percentage, as outlined in Attachment B of the TRM. The total volume for each waste type was computed by adding together each individual waste type volume within each industry group (see Attachment C of the TRM). Following a conversion table, provided by DHS, waste types were transformed to waste groups and generalized treatment methods were determined.

The quantity of waste oil produced by small quantity generators was estimated using a table prepared by the DHS, which was mailed to each county on 26 October 1987. This table identifies waste oil producing small quantity generators by business type and presents average production rates. Quantities of generated waste oil in 1986 were calculated by multiplying the industry specific waste oil production rate by the number of businesses of that type.

Tulare County's small quantity generator waste stream was characterized using the above methodology and specific county business data. Based on information collected by the County, 385 small quantity generators operate businesses within Tulare County. These businesses include gas stations and auto repair shops, dry cleaners, photography stores, copy shops, and printing services.

Results indicate the SQG's produced the largest component of the County hazardous waste stream, approximately 4,340 tons, during 1986. Waste oil, the major hazardous waste type generated, accounted for approximately 3,665 tons or 84 percent of the total. Used lead-acid batteries, a component of the metal containing liquids waste group, were produced at a rate of 490 tons per year or 11 percent of the waste stream. Spent solvents and photographic wastes ranked third and fourth totaling 69.5 and 32.2 tons produced during 1986 and accounting for 10 and 5 percent of the SQG waste stream, respectively. Strong acids or alkalies, and dry cleaning filtration residues, each contributed approximately 3 percent to the total. The top six waste types accounted for approximately 99 percent of SQG wastes. A summary of SQG wastes produced during 1986 in Tulare County is shown in Table 4-2.

4.1.4 Household Wastes

"Household wastes comprise a substantial portion of the hazardous waste stream in each California county. Sources of household wastes include: leftover pesticides, half-full paint cans, swimming pools chemicals, waxes, paint removers, and hobby supplies¹." An additional major component of the household hazardous waste stream is oil used in equipment lubrication. Although exact figures detailing household hazardous waste amounts and types are not available, estimated amounts were calculated using several assumptions and a

¹"You Don't Have to Leave Home to Find a Toxic Dump", Richard A. Lovett, Sacramento Bee, September 27, 1987.

TABLE 4-2
QUANTITY OF SMALL GENERATOR WASTES PRODUCED DURING 1986
IN TULARE COUNTY

<u>Waste Type</u>	<u>Waste Group</u>	<u>Primary Treatment Method</u>	<u>Total Volume (tons)</u>	<u>Percentage</u>
Waste oil	Waste oil	Oil recovery	3,665.0	84.45
Used lead-acid batteries	Metal containing liquids	Other recycling	490.2	11.30
Spent solvents	Halogenated or non-halogenated solvents	Solvent recovery	69.5	1.60
Photographic wastes	Miscellaneous wastes	Other recycling	32.2	0.74
Strong acids or alkalies	Non-metallic inorganic liquids	Aqueous treatment-metals/neutralization	19.5	0.45
Dry cleaning filtration residues	Non-halogenated organic sludges and solids	Solvent recovery	18.0	0.41
Solutions or sludges containing silver	Metal-containing liquids and sludges	Other recycling	13.7	0.32
Other	Miscellaneous wastes	(see footnote ¹)	6.7	0.15
Ignitable wastes	(see footnote ²)	Incineration	6.5	0.15
Ignitable paint wastes	Dyes, paint sludges and resin wastes	Incineration	6.0	0.14
Paint waste containing heavy metals	Metal-containing sludges	Incineration	5.7	0.13
Waste inks containing solvents or heavy metals	(see footnote ²)	Other recycling	3.0	0.07
Spent plating wastes	Metal-containing liquids	Aqueous treatment metal/neutralization	2.0	0.05

1 Treatment categories for miscellaneous wastes were separated into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment metals/neutralization.

2 Waste group not identified by DHS in the TRM for this waste type.

TABLE 4-2

QUANTITY OF SMALL GENERATOR WASTES PRODUCED DURING 1986
IN TULARE COUNTY
(Continued)

<u>Waste Type</u>	<u>Waste Group</u>	<u>Primary Treatment Method</u>	<u>Total Volume (tons)</u>	<u>Percentage</u>
Cyanide wastes	Cyanide metal-containing liquids	Aqueous treatment metal/neutralization	1.4	0.03
Ink sludges containing chromium or lead	Metal-containing sludges	Other recycling	0.4	0.01
TOTAL			4,339.8	100%

modification of Method 4 presented in the TRM. Based on these calculations, it was estimated that households in Tulare County contributed approximately 14 percent to the total hazardous waste stream in 1986.

Three assumptions were used to quantify the amount of household hazardous waste generated within the County. In following the basic approach of Method 4, it was assumed that county projections for waste generated during the target year, 1986, as pounds per person per day, were based solely on residential refuse. (This will result in upward biased estimates that reflect maximum generated household waste quantities.) It was also assumed that the percentage of hazardous waste contained in a typical load of residential refuse could be approximated by using 0.5 percent. Surveys for the Waste Management Board found that household hazardous waste within residential refuse ranged from .0045 percent at Puente Hills in 1981 to 0.6 percent at the BFI transfer station in San Carlos by Stanford Research institute (SRI). Discussions with Susan J. O'Leary, a Waste Management Specialist with the Waste Management Board, indicated that recent surveys discovered a range between 0.3 and 0.6 percent and she stated that 0.5 percent provided a good approximation of the hazardous waste ratio in residential refuse. Finally, it was assumed that reference material, presented by the DHS, for landfill surveys at Puente Hills and Mission Canyon in 1981 and 1979, respectively, adequately pattern waste type percentages likely to occur in Tulare County.

The methodology to determine the components and amounts of the household waste stream was based on current year calculations of county population, total county waste generation, the percentage of hazardous waste contained in residential refuse, and the percentage of each waste type within the hazardous waste total.

County population was determined using estimated figures obtained from the California Department of Finance, Population Research Unit. County population for 1986 was 282,984 persons.

The total waste generated by the County was computed by multiplying population estimates by a projected waste generation rate. The Tulare County Department of Public Works developed a 1986 projection of 5.8 pounds of waste per person per day expected to be delivered to four County landfills. Estimated total waste for 1986 was approximately 299,539 tons, which equals the total residential refuse produced by the County, following a previous assumption.

The percentage of hazardous waste in residential refuse was calculated by multiplying the total residential refuse by the .5 percent, following a preceding assumption developed by the California Waste Management Board. Using this ratio, total household hazardous waste was calculated at 1,498 tons for Tulare County.

Household hazardous waste types and representative percentages were identified following survey data included in Attachment I of Part F of the TRM and previously mentioned assumptions. Waste types were transformed into waste groups and then treatability categories, using Attachment D and Part A of the TRM.

Results indicate that household hazardous wastes comprise approximately 14 percent (1,498 tons) of the total hazardous waste stream in the County. Waste oil is the largest waste group totaling approximately 688 tons per year (see Table 4-3). The second largest contributor to the waste stream is dye and

TABLE 4-3

QUANTITY OF HOUSEHOLD WASTES GENERATED DURING 1986
IN TULARE COUNTY

<u>Waste Type</u>	<u>Waste Group</u>	<u>Total Quantity Generated (tons)</u>	<u>Generalized Treatment Method</u>	<u>Percentage</u>
Oil and similar lubricant products	Waste oil	688	Oil recovery	46
Paint and building	Dye and Paint sludges and resin wastes	435	Incineration	29
Gasoline and solvents	Halogenated solvents	300	Solvent recovery	20
Other wastes	Miscellaneous ¹ wastes	30	Other recycling	2
		30	Stabilization	2
		7.5	Aqueous treatment- organic	0.5
		7.5	Aqueous treatment- metals/neutralization	0.5
TOTAL		<u>1,498</u>		<u>100%</u>

-
- 1 Treatment categories for miscellaneous wastes were separated into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment metals/neutralization.

paint sludges and resin wastes, these accounted for 29 percent or 435 tons of generated waste per year. Halogenated solvents and miscellaneous wastes account for 20 and 5 percent of the waste, respectively. Specific waste types and respective percentages were assumed to be similar to those detected in the Puente Hills and Mission Canyon Landfill surveys presented in the TRM.

4.1.5 Contaminated Sites

Wastes generated during remediation procedures at contaminated sites are a major source of the hazardous waste in California. Contaminated sites include Bond Expenditure Plan sites (State and Federal), reported sites, leaking underground tanks, abandoned sites, pre-RCRA hazardous waste landfills and other closed inactive sites. Also included are known sites and those yet to be discovered. In general, wastes removed during site cleanups are manifested and included in the Hazardous Waste Information System (HWIS) data base.

Contaminated sites contributing hazardous wastes to the 1986 Tulare County hazardous waste stream were identified using several methods. One time only cleanup sites were determined using HWIS data, which highlights sites by a "1X" prior to the facility name. Additional sites were identified using lists prepared by the DHS and sent to the county. Lastly, sites were determined by manifested quantities of typical sites remediation wastes. These wastes include contaminated soils, California Waste Category Code-611, and asbestos-containing wastes, Code-151.

Results indicate 13 site remediation projects in progress within Tulare County during 1986 and a generated waste volume of 2,424.88 tons. This represents approximately 23 percent of the entire county's hazardous waste stream. The largest contribution, totaling 1,659.82 tons of non-halogenated organic sludges and solids, resulted from the removal of two leachate ponds associated with a printing industry. Contaminated soils were generated at six locations and ranked as the second largest waste producing group totaling 756.54 tons. The remaining six sites generated asbestos-containing waste totaling 5.10 tons, PCB's and dioxins totaling 1.95 tons, halogenated solvents totaling 1.25 tons and pesticides totaling 0.22 tons. A summary of waste generated during site cleanups is presented in Appendix B, suggested Table I.

4.1.6 Designated and Non-Hazardous Wastes

Tulare County's data base does not contain information on designated or non-hazardous waste. As accounting systems for each of these wastes are developed, the data will be included in the data base and included in the plan.

4.1.7 Wastes Imported and Exported

A total of 49 tons of baghouse wastes were imported from Los Angeles County and treated in Tulare County during 1986.

In general, all hazardous wastes generated in Tulare County and manifested for off-site shipment were exported from the County. Data from the Hazardous Waste Information System identified six counties accepting hazardous waste from Tulare County (see Table 4-4).

TABLE 4-4

Disposal Location of Exported Hazardous Waste
From Tulare County During 1986

<u>Importing County</u>	<u>Quantity of Waste Received (tons)</u>
Kings	3,625.3
Los Angeles	112.64
Unknown	60.37
Santa Clara	19.51
Santa Barbara	15.93
San Mateo	9.26
Contra Costa	5.05
	<hr/>
Total	3,848.06

The majority of wastes, approximately 3,625 tons, were exported to Kings County for disposal at the Kettleman Hills facility. The next largest importer of Tulare County waste was Los Angeles County accepting nearly 113 tons. The remaining four counties and the unknown location comprised the final three percent of the exported waste.

Generally, disposal locations for wastes generated in 1986, were not waste type specific. Although San Mateo County imported only solvent wastes and Contra Costa County only asbestos containing wastes, these quantities totaled approximately 14 tons and less than 0.4 percent of wastes exported by Tulare County. The remaining counties accepted a wide range of waste types. The single largest waste type exported, 1,998 tons of unspecified waste sludge, was transported to the Kettleman Hills facility in Kings County by Chemical Waste Management.

4.1.8 Summary of Current Waste Generation

Hazardous waste generated in Tulare County is the combination of six categories detailed in the TRM. These categories include wastes managed on-site, wastes shipped off-site, small quantity generator wastes, household wastes, wastes from contaminated sites, designated and nonhazardous wastes. Although wastes imported and exported make up a seventh category and are summarized, they are not included in generated waste totals for the county. Information is not currently available to estimate quantities of designated or nonhazardous wastes. As data becomes available, it will be included in the plan.

An estimated total for 1986, using all available information provided by the DHS and County administrators, yields approximately 10,749 tons of hazardous waste in the Tulare County waste stream (see Table 4-5). Approximately 840 tons of waste were managed using on-site treatment facilities. Wastes shipped off-site totaled approximately 4,070 tons, which includes quantities of wastes generated at contaminated sites. Small quantity generators contributed nearly 4,340 tons to the waste stream, while household waste totaled approximately 1,498 tons. Imported and exported wastes totaled 49 and 3,848 tons, respectively, for 1986.

4.2 Current Treatment Facility Needs

A responsibility under the CHWMP is to identify a generalized treatment facility for each type of waste generated within the County. A summary of the generalized treatment facilities necessary to manage currently generated wastes is shown in Table 4-6. An oil recovery system is necessary to handle the 4,670 tons of waste oil and oily sludges created each year. Incineration methods would effectively manage approximately 34 percent of the overall waste stream. Solvent recovery is needed to manage nearly 7 percent of the generated wastes. In addition, other recycling is necessary to effectively handle over 580 tons of waste per year which is mainly composed of used lead-acid batteries. The remaining three required generalized treatment methods include: aqueous treatment for both organic compounds, and metal/neutralization and stabilization.

TABLE 4-5

Tulare County's Overall Hazardous
Waste Stream by Category

<u>Waste Category</u>	Quantity of Waste Generated (Tons)
Waste Shipped Off-Site ¹	3300
Household Waste	1498
Small Quantity Generator Waste	4340
Contaminated Sites	770.52
On-Site Wastes	840
Designated and Nonhazardous Wastes	Unknown
	<hr/>
Total	10,749
Imports	49

¹Does not include quantities of contaminated soil containing wastes, asbestos, or other wastes associated with site remediation work. These wastes were shipped off-site as detailed in the HWIS data sheets, and included under the contaminated sites category.

TABLE 4-6

GENERALIZED TREATMENT METHODS FOR THE 1986
TULARE COUNTY HAZARDOUS WASTE STREAM

<u>Generalized Treatment Method</u>	<u>Total Generated (tons)</u>	<u>Percentage</u>
Oil recovery	4670	47.2
Incineration	3359	34.0
Solvent recovery	664	6.7
Other recycling	583	5.9
Aqueous treatment-metals/neutralization	447	4.5
Aqueous treatment-organic	128	1.3
Stabilization	39	0.4
TOTAL	9890	100%

Results from the current waste stream analysis indicate that quantities of hazardous waste generated within Tulare County are below economic limits for all treatment facility methods presented in the TRM by the DHS. Feasibility recommendations were based on two references distributed by the DHS. The first reference was prepared by Clark-McGlennon Associates of Boston, Massachusetts in November 1980 and is titled An Introduction to Facilities for Hazardous Waste Management. This general reference is contained in the TRM under Part J and describes a hypothetical integrated waste management facility. The main reference source was prepared in 1985 for the Southern California Hazardous Waste Management Project by Louis Berger and Associates, Inc., from San Bernardino and is titled Problems and Needs for the Management of Hazardous Wastes in Southern California. Although only two tables were provided from this document, they are the DHS recommended source for estimating quantities of waste necessary for profitable treatment facility operations. Quantities presented in both references are estimates and a thorough feasibility investigation should be completed prior to construction.

Several assumptions were necessary in using the Louis Berger and Associates' document for a feasibility analysis. First, it was assumed that nonsubsidized facilities smaller than those recommended in the document would not prove profitable. Secondly, profitability would vary according to market conditions and regulatory requirements. Lastly, additional assumptions required to size typical treatment facilities are footnoted in Table G.

A small oil recovery facility, which is the closest method likely to prove cost effective, requires 10,000 to 15,000 tons of waste annually. Tulare County's current generation rate is approximately 4,670 tons which may or may not prove recoverable by implementation of the plan.

Following oil recovery, the next most cost effective treatment method is an incineration facility. Operation of a small incineration facility would require 15,000 to 30,000 tons of waste annually. Tulare County's current generation rate is approximately 3,359 tons and includes over 700 tons of contaminated soils. These soils, generated during site remediation, are not expected to contribute substantially to future waste stream volumes.

Each of the other treatment facilities required to manage Tulare County wastes are even less feasible. Operation of a small solvent recovery facility would require 10,000 to 15,000 tons of waste per year.² Considering Tulare County's current generation rate of 664 tons per year of solvent wastes, profitable operations would require additional quantities imported from other counties. A recycling and aqueous treatment facility would require a minimum of 10,000 and 70,000 tons of waste per year respectively depending on the information source references. These quantities are substantially above current county generation rates of 583 and 447 tons. Stabilization would require approximately 5,000 tons of waste per year, while 1986 production rates totaled 39 tons.

² Guidelines for the Preparation of Hazardous Waste Management Plans, California Department of Health Services Toxic Substances Control Division, June 30, 1987, Part J, Table 1.

TABLE 4-7

TYPICAL TREATMENT FACILITY SIZES¹Conventional Aqueous Treatment²

Small Treatment Facility	70,000 TPY
Medium Treatment Facility	175,000 TPY
Large Treatment Facility	350,000 TPY

Stabilization/Solidification³

Small Treatment Facility	50,000 TPY
Medium Treatment Facility	125,000 TPY
Large Treatment Facility	250,000 TPY

Incineration - Rotary Kiln⁴

Small Treatment Facility	30,000 TPY
Medium Treatment Facility	65,000 TPY
Large Treatment Facility	100,000 TPY

Incineration - Cement Kiln⁵

Small Treatment Facility	15,000 TPY
Medium Treatment Facility	35,000 TPY
Large Treatment Facility	85,000 TPY

Wet Air Oxidation⁶

Small Treatment Facility	5,000 TPY
Medium Treatment Facility	15,000 TPY
Large Treatment Facility	40,000 TPY

Residuals Repository⁷

Small Treatment Facility	75,000 TPY
Medium Treatment Facility	170,000 TPY
Large Treatment Facility	360,000 TPY

NOTES:

1. All treatment facilities were sized using the following assumptions:
 - a. One gallon of waste weighs 8.34 pounds.
 - b. All facilities will operate 330 days per year.
 - c. All facilities will operate on a 24-hour day basis.

TABLE 4-7
(Continued)

TYPICAL TREATMENT FACILITY SIZES¹

2. Conventional aqueous treatment sizing was based on:

50,000 gpd - small
125,000 gpd - medium
250,000 - large
and rounded up slightly
3. Stabilization/solidification sizing was based on:

150 tpd - small
300 tpd - medium
600 tpd - large
4. Rotary kiln incineration sizing was based on the following additional assumptions:

50 million BTU/hr 1,000 gal/hr = 33,000 TPY - small
110 million BTU/hr 2,200 gal/hr = 72,600 TPY - medium
250 million BTU/hr 5,000 gal/hr = 165,000 TPY - large
5. Cement kiln incineration sizing was based on the following additional assumptions:

10,000 BTU/pound or 80,000 BTU/gallon
36 million BTU/hr 470 gal/hr = 15,000 TPY - small
85 million BTU/hr 1,100 gal/hr = 35,000 TPY - medium
206 million BTU/hr 2,700 gal/hr = 85,000 TPY - large

Also note that for cement kilns, typically only forty percent of material burned is hazardous waste liquid.
6. Wet air oxidation facility sizing was based on:

3,600 gpd - small
10,800 gpd - medium
28,800 gpd - large
7. Residuals repository facility sizing was based on a previously published document entitled, "Residuals Repository - Conceptual Design and Feasibility Study", by C. E. Schubert, Ph.D. (D'Appolonia Waste Management Services) for Southern California Hazardous Waste Management Project, February 1984.

Because of the low quantities of hazardous waste generated in Tulare County, a small transfer station appropriately located near the major generation center could be considered. Such a station would combine compatible wastes prior to transfer to a treatment facility. Tulare County would have to consider importing adequate quantities of hazardous waste to operate a small treatment facility.

Air quality limits may restrict the permitting of an incineration facility or prohibit operations periodically. This type of a facility, possibly depending on size and composition of the waste stream, would also require importing of waste.

In conclusion, based solely on results of the investigation of current hazardous waste generation in Tulare County, construction of treatment facilities would not appear to be prudent at this time. The development of facilities dedicated only to Tulare County's waste stream appear to be economically infeasible, with the possible exception of a transfer station. However, present conditions may change substantially as population and business activities increase. The population projection for the county in 2000 is approximately 393,436, an increase of nearly 39.0 percent. Increases in population and industrial productivity may create additional sources of hazardous waste in the years to come.

In the interim, the sharing of waste generation information with adjacent counties, those that export into Tulare County, and those to which Tulare County sends wastes, should continue. It is, and will continue to be, imperative that the waste stream and the waste management system be monitored closely to insure accessibility to environmentally safe and economical waste disposal, treatment, and recycling alternatives.

CHAPTER 5

PROJECTED HAZARDOUS WASTE QUANTITIES IN THE YEAR 2000 AND TREATMENT FACILITY NEEDS

AB2948 (Tanner, 1986) requires each county to prepare for managing and providing adequate treatment, storage and disposal capacity for hazardous wastes generated within its borders. Projections of hazardous waste growth are essential to insure proper management facilities are available when needed, since untreated hazardous waste will be banned from landfill facilities after May 8, 1990. To attain the goals of the Tulare County Hazardous Waste Management Plan (CHWMP), the effects of industrial growth, population, remediation of contaminated sites and new waste streams on the current hazardous waste stream must be considered. By projecting these effects on the current waste stream a "snap-shot" picture of the waste stream in the year 2000 can be created and evaluated to determine future facility needs.

5.1 Projected Waste Stream Composition

The Department of Health Services (DHS) requires that analysis of the projected waste stream composition consider wastes managed on- and off-site, from small quantity generators, households, contaminated sites and new waste streams. Each of these segments of the Tulare County waste stream is discussed individually.

5.1.1 Wastes Managed On- and Off-Site

A major segment of the future hazardous waste stream is composed of hazardous wastes shipped off-site to transfer, storage or disposal (TSD) facilities and wastes managed on-site by the generating industries. Data detailing these portions of the current waste stream were compiled in the database, known as the Hazardous Waste Information System (HWIS), from manifest forms processed by the Department of Health Services. To project quantities of wastes to the year 2000 requires a comprehensive investigation into the specific industrial character of growth and consumption in Tulare County.

The anticipated economic outlook for Tulare County, and corresponding implications for future local economic growth, are good. Tulare County is one of the richest agricultural regions in the United States and has ranked as the second most productive agricultural county in the U.S. in terms of the value of annual crop production. This remains the mainstay of the economy and has acted as a draw for food processing plants and associated industrial operations in recent years. The State Employment Development Department anticipates that 50 percent of all new industrial jobs in Tulare County between 1985 and 1990 are projected to occur in these industries. However, there is also a trend towards warehouse and distribution, plastics and electronics facilities locating in the central valley of California. It is foreseen that this trend will accelerate during the 1990's. The primary reason is that Tulare County and other counties in the San Joaquin Valley are located centrally between the Los Angeles Basin and the San Francisco Bay area. The cost of operation has become a major factor for many firms. Tulare County offers a cost effective

location within California for many metropolitan area firms to expand as increased demand warrants.

Furthermore, the County offers incentives such as the Enterprise Zone and Main Street programs in Porterville and downtown restoration programs in Dinuba, Lindsay, Tulare and Visalia. Most of the County's municipalities offer business incentives and some formal location assistance. Also, there is a county-wide Economic Development Corporation which offers business assistance, loan packaging, and location assistance for firms wishing to expand into the County from outside the area, as well as local business retention.

Forecasts of anticipated economic growth in Tulare County are virtually nonexistent at the present time. The County's current General Plan, for example, includes no specific projections of growth for any sector of the local and regional economy. The county has an adopted Overall Economic Development Program; however, this document does not provide quantitative projections for economic growth in any sector of the local economy. Growth in retail sales activity in the county has been forecasted, although on a fragmented basis, in a series of recent consultant studies performed on behalf of several individual cities. In general, county-wide retail trade growth is anticipated to parallel projected growth in both county-wide population and real personal income for the duration of the study period. Several financial institutions have done economic forecasting for the San Joaquin Valley in recent years, although the work has been substantially scaled down recently. Contacts with those institutions historically active in such forecasting for the region produced no specific, quantitative data which could be applied to this planning process, but provided general assumptions regarding the regional economy upon which the specific forecasts made in this Plan have been partially based. Population growth projections utilized in the forecasting component of the Plan have been obtained from the Tulare County Association of Governments and State of California Department of Finance, Population Research Unit.

Without specific available county industrial growth estimates, projections used in the Plan were derived using information from several sources and assumptions. First, industrial operations in Tulare County during 1982 and 1986 were identified by two digit Standard Industrial Classification (SIC) Codes (See Table A). Using these as reference points, the 1982 to 1986 growth rate was applied to 1986 industry totals and a projected number of businesses for each SIC Code in the year 2000 was calculated. Next, these projections were elevated, where discussions with officials of the Tulare County Economic Development Corporation and local cities and chambers of commerce indicated current sector specific industrial prospects or anticipated trends in local and regional industrial development and business recruitment. Finally, to determine the industrial sector specific multiplier, corresponding to expected growth by the year 2000, increased capacity of existing businesses was considered.

Forecasted real growth in economic output in established industries for the period from 1986 to the year 2000 was estimated using an established 1.12 percent increase per year developed by the Tulare County Economic Development Corporation. This percentage compounded annually equals 18.2 percent by the year 2000. The increased capacity of 18.2 percent was added to the increase expected from projected industrial growth to generate an industrial specific growth multiplier (also shown in Table 5-1).

TABLE 5-1
HISTORIC AND PROJECTED ECONOMIC GROWTH
IN TULARE COUNTY

SIC Code Number	Industry Type	Number of Industries			New Industry Growth Rate	Industrial Specific Growth Multiplier ¹
		1982	1986	2000		
07	Agricultural Services	61	64	70	1.094	1.276
20	Food & Kindred Products	17	21	30	1.429	1.611
27	Printing & Publishing	15	15	16	1.067	1.249
28	Chemical & Allied Products	5	5	5	1.000	1.182
29	Petroleum Refining & Related	0	1	1	1.000	1.182
33	Primary Metal Industry	4	5	7	1.400	1.582
34	Fabricated Metal Products	21	24	30	1.250	1.432
35	Machinery (except Electrical)	22	29	44	1.517	1.699
36	Electrical (including Machinery/Equipment)	10	12	16	1.333	1.515
37	Transportation Equipment	5	6	8	1.333	1.515
39	Miscellaneous Manufac- turing Equipment	6	6	8	1.333	1.515
49	Electric, Gas and Sanitary Services ²					1.390
55	Automotive Dealers and Gasoline ² Service Stations					1.390
59	Miscellaneous Retail ³					1.600
75	Automotive Repair, Services and Garages ²					1.390
82	Social Services ²					1.390

1 Industrial specific growth multiplier = new industry growth rate + historic capacity increase.

2 Industries are consumption driven and assumed growth is comparable to population growth.

3 Industry estimates growth at 4 percent per year.

" " Information currently not available.

Projected waste quantities were calculated from generators shipping wastes off-site and those managing wastes on-site. Waste quantities identified as resulting from remediation projects at contaminated sites were removed from this category and will be projected in the contaminated sites category. Each generator was identified by SIC Code number using the Dun and Bradstreet Business Reference or direct contact through personnel offices. Hazardous waste quantities from each generator, identified in Chapter 4 (Current Waste Stream Composition), were multiplied by the industrial specific growth multiplier to determine projected quantities in the year 2000. Quantities of identical waste groups were aggregated and entered into Table 5-2.

Results show that projected hazardous waste quantities in the year 2000 for Tulare County from industrial generators are expected to total 2,970.29 tons or 26 percent of the overall projected hazardous waste stream. The main component of this waste stream is metal-containing liquids totaling 1,090.29 tons, or nearly 38 percent of the total. Non-halogenated organic sludges and solids accounted for approximately 617 tons or 21 percent of the total. Ranking third and fourth are oily sludges and non-halogenated solvent wastes generated at a rate of 416.59 and 348.88 tons per year, or 14.4 and 12.0 percent, respectively. Pesticides ranked fifth totaling approximately 155 tons or 5.4 percent. The five largest waste groups generated 91 percent of the waste stream for hazardous wastes shipped off-site and those managed on-site. A summary detailing the composition of projected wastes added to the waste stream by this category is shown in Table 5-2.

5.1.2 Small Quantity Generators

Small quantity generators (SQG's) are the largest source of hazardous waste to the Tulare County hazardous waste stream. As typically defined, SQG's are those whose monthly hazardous waste stream is less than 1,000 kilograms (approximately 1 ton). Although quantities created by each generator are generally minimal, the multiplying effect of hundreds of generators creates a substantial source of hazardous waste to the County waste stream.

Businesses representing small quantity generators, as defined by this Plan, typically serve the general consumer population in the regional economy. Consequently, it can be generally assumed that growth in waste generated by business in this category will approximately parallel overall anticipated growth in Tulare County's population throughout the study period.

Projected quantities of hazardous waste from small quantity generators in the year 2000 were determined by multiplying the quantities of waste identified in Chapter 4 by the anticipated Tulare County population growth rate. According to the Department of Finance, the population of Tulare County for 1986 was 282,984 and for the year 2000 will be approximately 393,436 for a projected 39 percent increase. In addition to the State Department of Finance's projections, low-range and high-range projections of population varying from the State-estimated total by minus 5 percent and plus 5 percent were calculated. The low range population figure totals 373,764 persons and a 32.1 percent increase, while the high range population figure shows an estimated 413,108 persons or a 46.0 percent increase. Corresponding waste stream generation levels were calculated according to waste type and waste group.

TABLE 5-2

PROJECTED QUANTITIES OF HAZARDOUS WASTE SHIPPED OFF-SITE AND MANAGED ON-SITE
DURING THE YEAR 2000 BY GENERATORS IN TULARE COUNTY¹

<u>Waste Group</u>	<u>Total Quantity of Manifested Waste (tons)</u>	<u>Percentage of Waste</u>
Metal-containing liquids	1126.48	37.9
Non-halogenated organic sludges and solids	635.21	21.3
Oily sludges	427.11	14.4
Non-halogenated solvents	350.82	12.0
Pesticides	159.36	5.4
Non-metallic inorganic liquids	111.01	3.7
Waste oil	69.94	2.4
Halogenated solvents	33.86	1.1
Miscellaneous wastes	31.84	1.1
Organic liquids	11.55	0.3
Dye and paint sludges and resins	10.88	0.3
Metal-containing sludges	2.23	0.1
Contaminated soil	0	0
PCB's and dioxins	0	0
Cyanide and metal liquids	0	0
Halogenated organic sludges and solids	0	0
Non-metallic inorganic sludges	0	0
TOTAL	2970.29	100.0

¹ Quantities were projected using 1986 DHS Hazardous Waste Information System data sheets and economic multipliers representative of future anticipated economic growth. Additional data identified by the Toxic Substances Control Division concerning hazardous waste managed by route service haulers were included.

Results indicate that approximately 6,032 tons of hazardous wastes may be generated by small quantity generators in the year 2000. This will account for nearly 54 percent of the entire County waste stream total. The largest component of the SQG category is waste oil totaling 5,094.4 tons, or approximately 84 percent. Waste oil is used in lubricating machinery and automobiles, and is generated largely by service stations. The second largest waste produced is used lead batteries which are a constituent of the metal containing liquids waste group. Used batteries are expected to total 681.4 tons or 11.30 percent of the waste stream in the year 2000. Spent solvents and photographic wastes rank third and fourth, with estimated generation rates of approximately 97 and 45 tons, respectively. The top four waste groups account for over 98 percent of the wastes in the small quantity generator waste stream. Low and high population projections produce a range of waste production from 5,616 to 6,454 tons for SQG's in the year 2000. A summary of the SQG waste stream composition is shown in Table 5-3.

5.1.3 Household Hazardous Wastes

Household wastes were defined in Chapter 4. The projections to the year 2000 employ this definition and follow similar assumptions made in that Chapter.

The methodology used to determine the components and amounts of household waste streams was based upon the projections of county population, total waste generation, the percentage of hazardous waste contained in residential refuse, and the percentage of each waste type within the hazardous waste total. Several sources were used to determine the projected figures.

County population projected to the year 2000 was determined using figures compiled by the State Department of Finance in 1986. The expected population for the year 2000 for Tulare County is 393,436; an increase of approximately 39 percent.

The projected waste generation rate was calculated at 5.92 pounds per person per day. This rate was derived by dividing the estimated year 2000 population by the estimated tons of refuse generated during the same year. These projected figures were obtained from the Tulare County Solid Waste Management Plan, 1986 Update prepared by the County of Tulare Public Works Department.

The percentage of hazardous waste in residential refuse was calculated by multiplying the total residential refuse by 0.5 percent. This figure was reported to provide a good approximation by the California Waste Management Board following the assumptions listed in the Current Waste Stream Composition section of Chapter 4.

Results indicate that projected household hazardous wastes will comprise approximately 19 percent of the total hazardous waste stream in Tulare County for the year 2000. Projected quantities of household hazardous wastes are expected to total 2,125 tons (see Table 5-4). Because of the survey data used, waste group percentages are the same as those presented in the Current Waste Stream Composition report. Waste oil generation is anticipated to total nearly 978 tons. The second and third largest waste groups are composed of dye and paint sludges and resin wastes, and halogenated solvents totaling 616 and 425 tons, respectively. Miscellaneous wastes may account for 106 tons or 5 percent in the projected waste stream.

TABLE 5-3

PROJECTED QUANTITIES OF SMALL GENERATOR WASTES PRODUCED DURING THE YEAR 2000
IN TULARE COUNTY

<u>Waste Type</u>	<u>Waste Group</u>	<u>Primary Treatment Method</u>	<u>Total Volume¹ (tons)</u>	<u>Percentage</u>
Waste oil	Waste oil	Oil recovery	5094.4	84.45
Used lead-acid batteries	Metal containing liquids	Other recycling	681.4	11.30
Spent solvents	Halogenated or non-halogenated solvents	Solvent recovery	96.61	1.60
Photographic wastes	Miscellaneous wastes	Other recycling	44.76	0.74
Strong acids or alkalies	Non-metallic inorganic liquids	Aqueous treatment-metals/neutralization	27.10	0.45
Dry cleaning filtration residues	Non-halogenated organic sludges and solids	Solvent recovery	25.02	0.41
Solutions or sludges containing silver	Metal-containing liquids and sludges	Other recycling	19.04	0.32
Other	Miscellaneous wastes	(see footnote ¹)	9.31	0.15
Ignitable wastes	(see footnote ³)	Incineration	9.04	0.15
Ignitable paint wastes	Dyes, paint sludges and resin wastes	Incineration	8.34	0.14

1 1.00 x State Department of Finance projected year 2000 population of 393,436.

2 Treatment categories for miscellaneous wastes were separated into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment metals/neutralization.

3 Waste group not identified by DHS in the TRM for this waste type.

4 0.95 x State Department of Finance projected year 2000 population of 393,436.

5 1.05 x State Department of Finance projected year 2000 population of 393,436.

TABLE 5-3

PROJECTED QUANTITIES OF SMALL GENERATOR WASTES PRODUCED DURING THE YEAR 2000
IN TULARE COUNTY
(Continued)

<u>Waste Type</u>	<u>Waste Group</u>	<u>Primary Treatment Method</u>	<u>Total Volume¹ (tons)</u>	<u>Percentage</u>
Paint waste containing heavy metals	Metal-containing sludges	Incineration	7.92	0.13
Waste inks containing solvents or heavy metals	(see footnote ³)	Other recycling	4.17	0.07
Spent plating wastes	Metal-containing liquids	Aqueous treatment metal/neutralization	2.78	0.05
Cyanide wastes	Cyanide metal-containing liquids	Aqueous treatment metal/neutralization	1.95	0.03
Ink sludges containing chromium or lead	Metal-containing sludges	Other recycling	0.56	0.01
TOTAL			6032.4	100.0%
Low Range ⁴			5616.0	
High Range ⁵			6454.0	

1 1.00 x State Department of Finance projected year 2000 population of 393,436.

2 Treatment categories for miscellaneous wastes were separated into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment metals/neutralization.

3 Waste group not identified by DHS in the TRM for this waste type.

4 0.95 x State Department of Finance projected year 2000 population of 393,436.

5 1.05 x State Department of Finance projected year 2000 population of 393,436.

TABLE 5-4

PROJECTED QUANTITIES OF HOUSEHOLD WASTES GENERATED DURING
THE YEAR 2000 IN TULARE COUNTY

<u>Waste Type</u>	<u>Waste Group</u>	<u>Total Quantity Generated (tons)</u>	<u>Generalized Treatment Method</u>	<u>Percentage</u>
Oil and similar lubricant products	Waste oil	977.5	Oil recovery	46
Paint and building	Dye and Paint sludges and resin wastes	616.24	Incineration	29
Gasoline and solvents	Halogenated solvents	425	Solvent recovery	20
Other wastes	Miscellaneous ¹ wastes	42.5	Other recycling	2
		42.5	Stabilization	2
		10.63	Aqueous treatment- organic	0.5
		10.63	Aqueous treatment- metals/neutralization	0.5
TOTAL		2125		100%

1 Treatment categories for miscellaneous wastes were separated into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment metals/neutralization.

5.1.4 Contaminated Sites

While remediation efforts at known contaminated sites in California continue to proceed at a rapid pace, additional sites are discovered monthly and are expected to continue to increase the load on statewide hazardous waste facilities. These sites, as discussed in the Current Waste Stream Composition section of Chapter 4, include Bond Expenditure Plan sites (state and federal), leaking underground tanks, abandoned sites, pre-RCRA (Resource Conservation and Recovery Act of 1976) hazardous waste landfills, toxic pits, and other closed inactive sites. Also included are known sites and those yet to be discovered. Although the information available on these sites ranges significantly, rough estimates to quantify (see Table 5-5) and qualify the potential wastes are necessary due to the large volumes normally associated with cleanup activities.

Due to the nature of the available data, the methodology in evaluating the effects of contaminated sites on the future waste stream includes several assumptions and generalizations. First, because the goal of the projected waste stream is to obtain a likely "snap-shot" of waste generation in the year 2000 and since annual volumes of cleanup wastes are largely a function of expenditure rates, which may vary considerably, the sums of all expected waste quantities from each contaminated site were added together and equally divided to prepare a year 2000 projection. This projection method could provide abnormally high rates for the year 2000, but since little information is available for many of the sites, it is the method recommended by the DHS.

Secondly, because on-site methods are currently in operation within the County and in-situ (treatment in place) methods, while not in use, are currently economically feasible for hydrocarbon and solvent contaminated sites, these sites are not expected to substantially affect the projected County waste stream. Thirdly, although on-site treatment of heavy metals is expected to become economically feasible before the year 2000, this is currently not an option and therefore, sites with expected elevated levels of heavy metals are assumed to transport 50 percent of the wastes generated in site cleanup programs.¹ Also, pesticide contaminated wastes are currently not treated on-site, but up to 80 percent are expected to be removed without off-site transport by bioreclamation and stabilization methods in the year 2000.² Using this data, it was assumed that 30 percent of all wastes from pesticide contaminated sites will be transported to Class I or II facilities and must be included in the waste stream projections.

Projected waste quantities from anticipated remediation projects at contaminated sites throughout the county were determined by the Tulare County Department of Health Services. Each of the site categories: bond sites, leaking underground tanks, abandoned sites, hazardous waste landfills, closed inactive sites and known sites which may be added to a cleanup list, are discussed individually.

¹ Discussions with Dr. J. P. Slater, Principal Scientist with McLaren Environmental Engineering, Rancho Cordova, California, January 6, 1988.

² Slater, January 6, 1988.

Tulare County has nine listed sites in the current California Site Mitigation Expenditure Plan. From this list, general information is available at seven sites. Solvents were detected at two sites and hydrocarbons from a leaking tank contaminated one site. None of these sites is expected to generate wastes requiring transportation, following previous assumptions. Pesticide contaminated soils are expected to be generated during two site remediation programs. Waste totals may reach as high as 2,500 cubic yards or approximately 3,900 tons. Following earlier assumptions, cleanup operations may result in approximately 1,200 tons of generated contaminated soils. Two sites, containing soils contaminated by heavy metals, may result in waste quantities of approximately 400 cubic yards or 620 tons. Using previous assumptions, the projected quantity of transported heavy metal hazardous wastes may approach 310 tons. The last of the seven sites contains PCP and dioxins, each of which could result in transported contaminated soils, but currently no estimation is available detailing potential hazardous waste quantities.

Leaking underground tanks are a serious environmental problem which have the potential to generate large quantities of hazardous wastes during removal and cleanup. Tulare County has approximately 3,600 permitted tanks. The majority of the tanks provide storage for petroleum fuels, including leaded and unleaded gasolines. In addition to fuel storage, twelve 10,000 gallon tanks are used to store pesticides. A county tank testing and monitoring program has identified 77 sites where tanks will likely be removed. Typical tank excavation projects involving hydrocarbon leakage within Tulare County do not generate waste quantities for transport to Class I facilities. This is because surface aeration is permissible according to County Environmental Health officials. Pesticide storage tanks present a potential for transported waste quantities, but recent testing has shown these tanks are tight. Since tank integrity is difficult to project and monitoring systems are in place, these tanks are not expected to contribute to the Tulare County projected waste stream. Tulare County also has an underground storage tank for asphalt. Although asphalt tanks are difficult to test, the immobile nature of the liquid reduces the overall potential of contamination from leakage and subsequent remediation waste quantities.

Information is not available in Tulare County describing the projected waste quantities or waste groups for abandoned sites, hazardous waste landfills or closed inactive sites.

Tulare County contains three designated toxic pit sites according to information supplied by the DHS in a memo entitled "Other Data Sources and Site Mitigation Wastes". According to the Environmental Health Department for Tulare County, no information is currently available to define the waste groups or quantities of possible future site remediation procedures. As this information is collected it will be submitted for inclusion in the revised CHWMP.

Tulare County contains 15 sites entered on the Superfund List (Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)) generated by the Federal Environmental Protection Agency (EPA). The list includes two sites previously described in the section on Bond Expenditure Plan sites. No information is available on the sizes or the types of contaminants involved on the remaining 13 sites. As information is collected from these sites, it will be included in this section of the CHWMP.

TABLE 5-5

PROJECTED QUANTITIES OF HAZARDOUS WASTES FROM CONTAMINATED
SITES TO THE YEAR 2000 IN TULARE COUNTY

<u>Contaminated Site Category</u>	<u>Number of Waste Sites</u>	<u>Waste Group</u>	<u>Total Projected Quantities of Wastes Transported Off-Site During Cleanup Operations (tons)¹</u>	<u>Year 2000 Waste Quantity (tons)²</u>
Bond Expenditure Sites	2	Pesticides	233 + 930	83
	1	Metal Containing Liquids/Metal Containing Sludges	155	11
	1	PCP's and Dioxins	Unknown	Unknown
	1	Cyanide and Metal Liquids	155	11
	2	Solvents	0	0
Toxic Pits	3	Unknown	Unknown	Unknown
Other Known Sites ³	13	Unknown	Unknown	Unknown
TOTAL			1473	105

1 Assume 1 cubic yard of soil weighs 3105 lbs. or 1.55 tons.

2 Year 2000 waste quantity figures were determined by dividing the total projected transported waste quantities from 1986 to the year 2000 by 14.

3 Number of sites on the CERCLIS List which are not accounted for under the Bond Expenditure Sites.

5.1.5 New Waste Streams

In addition to projected wastes from industrial producers, small quantity generators, households and contaminated sites, the future waste stream should evaluate the potential new waste streams to enlarge the future waste stream. The Department of Health Services currently suggests an investigation into pretreatment sludges and wastes from new industries.

Pretreatment sludges are produced as a by-product of waste water treatment from industrial operations prior to discharge into municipal sewer systems. Additional pretreatment sludges may be created as industries continue to adjust waste water discharge composition to comply with existing water pollution requirements (Federal Water Pollution Control Act - "The Clean Water Act"). These requirements are interpreted and enforced by several regulatory agencies including city ordinances and standards, regional and state water quality control boards, and the federal EPA.

The effects of pretreatment sludges on the projected hazardous waste stream of Tulare County were determined by contacting a representative sample of the County's public sewage disposal districts. Each of these districts were questioned to evaluate the waste water sampling procedures, the number of large industrial waste generators and the degree of industrial compliance with pollution standards.

Contacting three public sewage districts in Tulare County, each with differing industrial waste stream size and character, provided a good approximation of the overall effect of industrial pretreatment wastes on the projected waste stream. The city of Tulare contains two large food processors and tests waste water discharge on a random basis. The testing includes pH, electrical conductivity, biological oxygen demand (BOD), and suspended solids for waste water discharged by the industries, but does not include tests for any hazardous chemicals. The remaining dischargers of the sewer district produce insignificant volumes of waste water.

The Porterville public sewage district utilizes self-monitoring sampling procedures and random testing by the district to insure compliance. The district contains one major industrial client, which complies with all regulatory waste water standards, and several smaller businesses which do not. The small businesses currently do not operate pretreatment units, but may in the future, to reduce elevated levels of heavy metals and phenols. Because of the relative size of the small industries the effects of sludges from pretreatment units are expected to be minimal. Finally, the Visalia district uses a similar sampling procedure as Porterville, but monitors seven large industries and many small businesses. Compliance in the Visalia district is well above 90 percent according to the district's manager.

Results of the investigation into the effects of pretreatment sludges on the overall projected county hazardous waste stream in the year 2000 indicate an insignificant volume of additional hazardous wastes will be generated by pretreatment activities. Hazardous waste quantities removed by a typical small industry, in a rural county such as Tulare, will not substantially alter the waste stream character or the projected treatment, storage or disposal facility needs. While sludges from pretreatment will not significantly affect the hazardous waste stream, the addition of any new industries may.

New industries in the county, not projected by use of SIC Code growth multipliers, are evaluated individually. These industries include very large manufacturing facilities that local economic councils may have targeted for relocation within the county or smaller industries creating a substantially different hazardous waste stream than is currently generated.

Members of the Tulare County Economic Development Corporation (EDC) were consulted to identify specific targets for county industrial growth. The goal of the EDC is to locate and encourage industries associated with production and packaging of agricultural products to relocate within the County, as well as maintain the economic vitality of current industrial enterprises. Because of the competitive nature of attracting large industrial clients the EDC is reluctant to discuss specific candidates.

The EDC was also contacted to determine if any smaller companies are expected to begin operations in the near future. Of particular importance are those with waste streams significantly different from current conditions. The EDC is hopeful in relocating a furniture industry within the County in the near term. While the quantities and types of waste are product specific, typical wastes from wood furniture production include ignitable paint wastes, halogenated and non-halogenated solvents, spent solvents and solvent still bottoms. As information regarding estimated waste quantities is determined, it will be added to this section of the CHWMP.

5.1.6 Summary of Projected Waste Generation

The projected hazardous waste stream is composed of five categories detailed in the Technical Reference Manual (TRM). These categories include wastes shipped off-site and managed on-site, small quantity generator wastes, household wastes, contaminated sites and new waste streams.

Estimates of the year 2000 Tulare County waste stream total approximately 11,234 tons (see Table 5-6). Small quantity generators are expected to create the largest source of waste totaling over 6,000 tons. Wastes shipped off-site and wastes managed on-site collectively account for 2,970 tons of the projected total. The third largest waste category is household hazardous waste expected to generate 2,125 tons in the projected Tulare County waste stream. Nearly 105 tons of hazardous wastes are anticipated during site remediation of contaminated sites, although available information provided only a general view of this category's future waste potential. Lastly, new waste streams are not expected to generate a substantial addition to the projected waste stream, but adjustment will be required as new large and small industries are developed in Tulare County.

5.2 Projected Treatment Facility Needs

As discussed in the opening paragraphs of this Chapter, a major responsibility of the CHWMP is to determine the projected treatment, storage and disposal (TSD) facility needs for Tulare County. As noted in Section 5.1.6, Tulare County's anticipated future yearly waste generation rate may total nearly 11,233 tons (see Table 5-7). To effectively manage these wastes, each of the treatment methods identified by the Department of Health Services is required.

TABLE 5-6

TULARE COUNTY'S OVERALL PROJECTED HAZARDOUS
WASTE STREAM BY CATEGORY

<u>Waste Category</u>	Quantity of Waste Generated (tons)
Waste Shipped Off-Site and Managed On-Site ¹	2970.29
Small Quantity Generator Waste	6032.4
Household Waste	2125
Contaminated Sites	106
	<hr/>
TOTAL	11,234

1 Does not include quantities of contaminated soil containing wastes, asbestos, or other wastes associated with site remediation work.

TABLE 5-7

GENERALIZED TREATMENT METHODS FOR THE YEAR 2000
TULARE COUNTY HAZARDOUS WASTE STREAM

<u>Generalized Treatment Method</u>	<u>Total Generated (tons)</u>	<u>Percentage</u>
Oil recovery	6568.95	58.5
Incineration	1348.69	12.0
Aqueous treatment-metals/neutralization	1329.05	10.6
Solvent recovery	931.31	7.5
Other recycling	838.89	6.7
Aqueous treatment-organic	753.09	6.1
Stabilization	63.3	0.5
	<hr/>	<hr/>
TOTAL	11,233	100%

5.2.1 Primary Treatment Methods

The largest segment of Tulare County's projected hazardous waste stream could be effectively managed by an oil recovery facility. Projected waste oil quantities in the year 2000 may reach approximately 6,600 tons, with lubricating oils from small quantity generators contributing the bulk of the wastes. Incineration could treat nearly 1,350 tons of expected wastes composed nearly equally of non-halogenated organic sludges and solids, dye and paint sludges and resins, and contaminated soils. Following incineration, aqueous treatment-metals/neutralization would handle more than 1,300 tons of hazardous wastes generated mainly in industrial manufacturing. Solvent recovery and other recycling could manage over 900 and 800 tons of the year 2000 Tulare County hazardous waste stream, respectively. Lastly, both aqueous treatment-organic and stabilization methods are required for approximately 750 and 63 tons of wastes, respectively. Each of these eight treatment methods is necessary to fully treat the hazardous wastes expected to comprise the County's waste stream in the year 2000.

Results from the projected waste stream analysis indicate that quantities of waste generated in Tulare County are below economic feasibility limits for each of the primary treatment methods presented by the DHS. Two references were distributed by the Department to provide feasibility recommendations. The first reference was prepared by Clark-McGlennon Associates of Boston, Massachusetts in November 1980 and is titled An Introduction to Facilities for Hazardous Waste Management. The main reference was prepared in 1985 for the Southern California Hazardous Waste Management Project by Louis Berger and Associates, Inc., from San Bernardino and is titled Problems and Needs for the Management of Hazardous Waste in Southern California (see Table 5-8). Quantities in both references provide general estimates and a thorough feasibility study should be considered prior to the development of any TSD facility in Tulare County.

The assumptions used to determine treatment method feasibility are identical for the projected waste stream facility analysis as for the existing waste generation analysis of Chapter 4. Also similar are the conclusions that each treatment method, while several are closer to being profitable, would require a significant influx of hazardous wastes from generating counties to become a worthwhile business opportunity in Tulare County.

5.2.2 Incineration as an Alternative Treatment Method

If primary treatment methods are abandoned for an alternative method, in treating waste oils, halogenated and non-halogenated solvents, and oil sludges as presented in the TRM Table E-1³, then the projected quantity of wastes which could be effectively managed by incineration totals nearly 9,400 tons.

³ Technical Reference Manual of the Guidelines for the Preparation of Hazardous Waste Management Plans, California Department of Health Services, Toxic Substances Control Division, June 30, 1987, Page E-9.

TABLE 5-8

TYPICAL TREATMENT FACILITY SIZES¹Conventional Aqueous Treatment²

Small Treatment Facility	70,000 TPY
Medium Treatment Facility	175,000 TPY
Large Treatment Facility	350,000 TPY

Stabilization/Solidification³

Small Treatment Facility	50,000 TPY
Medium Treatment Facility	125,000 TPY
Large Treatment Facility	250,000 TPY

Incineration - Rotary Kiln⁴

Small Treatment Facility	30,000 TPY
Medium Treatment Facility	65,000 TPY
Large Treatment Facility	100,000 TPY

Incineration - Cement Kiln⁵

Small Treatment Facility	15,000 TPY
Medium Treatment Facility	35,000 TPY
Large Treatment Facility	85,000 TPY

Wet Air Oxidation⁶

Small Treatment Facility	5,000 TPY
Medium Treatment Facility	15,000 TPY
Large Treatment Facility	40,000 TPY

Residuals Repository⁷

Small Treatment Facility	75,000 TPY
Medium Treatment Facility	170,000 TPY
Large Treatment Facility	360,000 TPY

¹ All treatment facilities were sized using the following assumptions:

- a. One gallon of waste weighs 8.34 pounds.
- b. All facilities will operate 330 days per year.
- c. All facilities will operate on a 24-hour day basis.

TABLE 5-8
(Continued)

TYPICAL TREATMENT FACILITY SIZES¹

2. Conventional aqueous treatment sizing was based on:

50,000 gpd - small
125,000 gpd - medium
250,000 - large
and rounded up slightly

3. Stabilization/solidification sizing was based on:

150 tpd - small
300 tpd - medium
600 tpd - large

4. Rotary kiln incineration was based on the following additional assumptions:

50 million BTU/hr 1,000 gal/hr = 33,000 TPY - small
110 million BTU/hr 2,200 gal/hr = 72,600 TPY - medium
250 million BTU/hr 5,000 gal/hr = 165,000 TPY - large

5. Cement kiln incineration sizing was based on the following additional assumptions:

10,000 BTU/pound or 80,000 BTU/gallon
36 million BTU/hr 470 gal/hr = 15,000 TPY - small
85 million BTU/hr 1,100 gal/hr 35,000 TPY - medium
206 million BTU/hr 2,700 gal/hr = 85,000 TPY - large

Also note that for cement kilns, typically only forty percent of material burned is hazardous waste liquid.

6. Wet air oxidation facility sizing was based on:

3,600 gpd - small
10,800 gpd - medium
28,800 gpd - large

7. Residuals repository facility sizing was based on a previously published document entitled, "Residuals Repository - Conceptual Design and Feasibility Study", by C.E. Schubert, Ph.D. (D'Appolonia Waste Management Services) for Southern California Hazardous Waste management Project, February 1984.

Conclusions on the economic feasibility of an incineration treatment facility differ between each available reference. In the Clark-McGlennon source, a typical small incineration facility treats between 5,000 and 10,000 tons of waste per year. These figures contrast with a standard cement kiln incineration system cited by Louis Berger, which requires approximately 15,000 tons per year. In addition to the uncertainty posed by these references, the accuracy of the projected waste stream must be considered.

While the information presented in the CHWMP is the most accurate data available and revisions are likely to enhance the quality, major assumptions have been made which could increase or decrease waste quantities substantially. To compensate for the potential variance of the projects, any treatment facility feasibility study would normally include an in-depth investigation into the quantities of incinerable wastes from actual operating treatment facilities, and may also present information regarding the economic effects of selecting an alternative treatment method for particular waste groups. Operations may be affected by the waste phase, either liquid or solid, of the materials to be treated. Similarly, the thermal potential may vary substantially between wastes for which incineration is the primary treatment method, and those for which it is an alternate method, affecting performance and consequently profitability. Lastly, any treatment facility feasibility study would normally identify permanent and temporary sources of waste both in and outside of Tulare County. Access to temporary quantities of waste would allow for the maintenance of cost effective operations.

5.2.3 Residuals Repository

In addition to treatment facilities, certain generators must have access to adequate residuals capacity. Residuals are generated during hazardous waste treatment and may total nearly 2,800 tons in the year 2000. Because a typical small residuals repository facility may require 10,000 to 20,000 tons of waste per year, according to the TRM, such a facility would have to import substantial quantities of waste to insure profitable operations.

5.2.4 Transfer Station

As mentioned in the current treatment facility needs assessment (Chapter 4, Section 4.2), a small transfer station located near a major generation center should be considered. This station would combine compatible wastes prior to transfer to a treatment facility. Bi-weekly deposits and transfers from such a facility would reduce transportation costs to generators and would limit the total time transporters of hazardous wastes are in transit on public highways.

5.2.5 Conclusions

Tulare County's waste stream could economically support small scale incineration and/or transfer station facilities by the year 2000. Influencing factors include, but are not limited to, environmental constraints, particularly air quality regulations, and progress toward implementing waste reduction and minimization strategies. The economic viability of such facilities would depend on the importation of wastes into Tulare County.

A more accurate assessment of facility needs will be possible as the quality of the data bases, on which projections of need depend, improves both locally and at a state level. The overview of facility needs that will be provided in the State Hazardous Waste Management Plan must also serve to clarify regional facility needs within the San Joaquin Valley and the state overall.

CHAPTER 6

HAZARDOUS WASTE REDUCTION

To satisfy the objectives of the Tanner Bill (AB 2948) safe, effective, and economical facilities for the management of hazardous wastes must be available when needed.¹ Projected increases in hazardous waste quantities will reduce disposal capacities throughout the State. "If California fails to provide sufficient capacity for managing hazardous wastes after 1989, it may lose hundreds of millions of dollars in federal superfund monies for cleanup of its major contaminated sites."² To lessen the burden of dwindling landfill capacity, manufacturers and users of commodities and resources must take measures to minimize hazardous waste production. Company presidents, plant managers, small business owners, and their employees must be committed if waste reduction and waste minimization programs are to be successfully implemented.

The commitment of government at all levels will be necessary if effective incentives and programs for waste reduction and waste minimization are to be provided. Government can provide technical assistance, act as an information clearinghouse, act to improve regulatory efficiency, develop new public education programs, and facilitate increased public participation in hazardous waste management planning and program implementation.

In theory, nearly every one is in favor of source reduction. Responsible manufacturers have already accomplished a great deal toward this goal. Still, much remains to be done as evidenced by the very contents of this Plan.

An analogy between energy conservation and waste reduction is appropriate. A dozen years ago, after the first embargo by most of the oil producing countries, energy conservation became universally popular. Strides were made in reducing the consumption of electricity; new homes, and some old, are being made more energy efficient; and cars are more fuel efficient. However, our dependency on foreign sources of petroleum has not significantly diminished, if at all. Waste reduction must not go the way of oil independence. Source reduction may be the opportunity to lessen the need for siting, both treatment, storage and disposal (TSD) facilities and residuals repositories.

6.1 Hazardous Waste Reduction Defined

The term "Hazardous Waste Minimization" has been given a number of meanings varying from waste reduction to management practices. Waste reduction includes on-site practices that reduce, avoid or eliminate the need for off-site hazardous waste facilities. It also involves source reduction and treatment.

¹ Guidelines for the Preparation of Hazardous Waste Management Plans, California Department of Health Services, Toxic Substances Control Division, June 30, 1987, p. 1-1.

² Guidelines for the Preparation of Hazardous Waste Management Plans, p. 1-2.

Source reduction includes process measures which reduce the volume or toxicity of the hazardous material used or generated, as shown in Figure 6-1. Source reduction may be accomplished by reducing the use of hazardous substances either by material (input) substitution or product substitution. Reduction may also be accomplished by better housekeeping and tighter manufacturing controls.

6.2 Techniques for Waste Reduction

The first step toward waste reduction is source reduction, followed by on-site recovery and recycling. In physical terms, there are several techniques for reducing the sources of hazardous waste. These are listed in Figure 6-1. The methods are arranged in hierarchical order, with (in theory) the lowest environmental/health impact at the top and the greatest potential for impact at the bottom. For example, on-site recovery and reuse is theoretically preferable to off-site recycling because, all other things being equal, less transportation means less risk of exposure. The dotted line indicates the cut-off point for purposes of defining source reduction; only those methods above the line are considered "source reduction" for purposes of this report. This hierarchy does not necessarily reflect practical or economic considerations; it is expressed solely in terms of potential risks to the environment and/or human health.

There are also several strategies which might be used, principally by government, to increase the use of source reduction techniques. These strategies are set forth in Figure 6-2, also in hierarchical form. The strategies in Figure 6-2 are arranged in order of intrusiveness into the freedom of private waste generators, with the least intrusive at the top and the most intrusive at the bottom. The strategies shown below the dotted line, in brackets, are traditional waste management strategies which may well have an indirect effect in stimulating source reduction activity, by making waste disposal more difficult or expensive. However, only those strategies above the dotted line are considered "source reduction" for purposes of this report. Again, this hierarchy of strategies does not necessarily reflect practical preferences; it is arranged only in order of intrusiveness by government into private activity.

6.3 Projected Industrial Waste Reduction

The potential for projected industrial waste reduction includes practices that reduce, avoid or eliminate the need for off-site hazardous waste facilities. The methods involve source reduction, recycling and treatment. Source reduction includes process measures which reduce the volume or toxicity of hazardous materials used or wastes generated. Recycling methods redirect end products back into the process system. On- and off-site treatment methods change the physical, chemical or biological character of the waste so it can either be reused in the original process, rendered non-hazardous or less hazardous, enable safer handling or reduce the volume. While each method will ultimately reduce the capacity requirements for future off-site disposal facilities, the Department of Health Services encourages source reduction as the highest priority reduction method.

FIGURE 6-1

TYPES OF PHYSICAL TECHNIQUES FOR SOURCE
REDUCTION AND WASTE MANAGEMENT

Product Substitution

(shift to product that results in lower hazardous waste output)

Input Substitution

(shift to less toxic input)

(shift to input that results in lower hazardous waste output from same product)

Process Modification

(lower hazardous waste output from same product and same types of input)

- redesign
- improved "housekeeping"

Recovery & Reuse (on-site)

(lower net output of waste material)

Recycling & Reuse (off-site)

- shared central facilities
- third party recyclers
- waste exchanges

- - - - -

Treatment

- neutralization
- stabilization
- evaporation ("dewatering")
- incineration

Disposal

- residuals repositories
- surface impoundments
- landfills
- deep-well injection
- ocean dumping

Source: Approaches to Source Reduction: Practical Guidance from Existing Policies and Programs, Environmental Defense Fund, Berkeley, CA 94704, June 1986, page 11.

FIGURE 6-2

TYPES OF IMPLEMENTATION STRATEGIES FOR SOURCE
REDUCTION AND WASTE MANAGEMENT

Research

- recycling
- process modification
- market research

Public Information/Education

Planning

Institutional Assistance

- information clearinghouse
- waste exchange

Technical Assistance

- engineering
- information
- audits

Economic Incentives

Regulatory Incentives

Mandatory Standards

- limits on waste production
- process design requirements

- - - - -
[Liability]

[Restrictions/Regulations for Disposal]

[Prohibition of Disposal]

Source: Approaches to Source Reduction: Practical Guidance from Existing Policies and Programs, Environmental Defense Fund, Berkeley, CA 94704, June 1986, page 12.

6.3.1 Large Quantity Generators

The general hazardous waste reduction potential for large industry within the County was determined using a workbook prepared for the California Department of Health Services Toxic Substances Control Division Alternative Technology Section by Jacobs Engineering Group, December 1987. The intent of the workbook is to provide a quantitative estimate of waste minimization potentials for Standard Industrial Classification (SIC) code specific businesses. "These estimates are approximate averages; they may not be achievable by a particular business nor are they limits to the waste reduction that a business may achieve."³ While the workbook addresses waste minimization through source reduction and on- and off-site recycling methodologies, it does not examine the potential of waste reduction by on- and off-site treatment technologies.

To determine the waste reduction potential in Tulare County, each industrial sector from the wastes managed on- and off-site categories was evaluated according to information presented in the "workbook". It was assumed that since waste reduction is typically more difficult for smaller industries, the moderate level of waste reduction determined by the reference source would best apply to conditions in Tulare County. A moderate level of waste minimization for an industrial process was assumed to be the amount resulting if one control methodology was used to reduce each waste stream. While industrial facilities might select different methods, the average reduction in waste is assumed to be given by the mean waste reduction for that waste stream. For industries generating greater than 1,000 kilograms of waste per month, as shown in suggested Table K in Appendix B, waste quantities were reduced by rates shown in Table 6-1. For industries or waste generating processes not listed in the workbook table, waste reduction rates by waste type were used as shown in Table 6-2.

Results indicate hazardous waste minimization potential for large generators may total approximately 378 tons for the projected year 2000 waste stream. This implies that an approximate 15% reduction in hazardous waste generation may be attainable through implementation of various source reduction and recycling methodologies. The waste group with the greatest potential for waste minimization is metal-containing liquids. Moderate waste minimization could reduce transported waste quantities for this stream by 280 tons. Three additional groups - oily sludges, non-halogenated sludges and solids and non-halogenated solvents - show significant reduction potential. Collectively, these four groups account for approximately 90% of the projected year 2000 waste minimization potential (see Table 6-3).

³ Hazardous Waste Minimization Potential Workbook, Jacobs Engineering Group, HTM Division. Prepared for the State of California Department of Health Services Toxic Substances Control Division Alternative Technology Section, December 1987, p. 3.

TABLE 6-1

YEARLY WASTE REDUCTION POTENTIAL FOR LARGE AND
SMALL INDUSTRIES IN TULARE COUNTY¹

<u>SIC Code</u>	<u>Process</u>	<u>Moderate Waste Minimization Potential (percent)</u>	<u>Maximum Waste Minimization Potential (percent)</u>
2879 07	Agricultural Chemicals Formulation & Agricultural Services	22	31
3471	Electroplating	17	42
	Metal Surface Treatment	15	35
2851	Paint Manufacturing	12	30
2911	Petroleum Refining	10	27
	Sulfur Removal Processes	18	45
3679	Printer Circuit Boards Manufacturing	20	42
27	Printing Operations	15	37
2491	Wood Preserving	11	31
	Metal Parts Cleaning	25	58
	Paint Application	24	51
	Process Equipment Cleaning	14	36

¹ Hazardous Waste Minimization Potential Workbook, Jacobs Engineering Group, HTM Division. Prepared for the State of California Department of Health Services Toxic Substances Control Division Alternative Technology Section, December 1987, p. 34-35.

TABLE 6-2

INDUSTRIAL WASTE REDUCTION BY WASTE TYPE¹

<u>Waste Type</u>	<u>Percent</u>
Oily Waste	8
Paint Waste	5
Pesticides	2
Halogenated Solvents & Still Bottoms	9
Other Organic Waste	4
Heavy Metal Solutions & Sludges	25
Corrosive Non-Heavy Metal Solutions & Sludges	25
Other Inorganic Waste	2

¹Technical Reference Manual of the Guidelines for the Preparation Services of Hazardous Waste Management Plans, California Department of Health Toxic Substances Control Division, June 30, 1987, p. H-1.

TABLE 6-3

**YEARLY WASTE REDUCTION POTENTIAL FOR
LARGE QUANTITY GENERATORS¹**

<u>Waste Group</u>	<u>Projected Total Quantity of Manifested Waste (tons)</u>	<u>Projected Reduction Potential (tons)</u>
Waste oil	59.41	4.75
Halogenated solvents	0.00	0.00
Non-halogenated solvents	66.84	14.65
Organic liquids	0.00	0.00
Pesticides	138.31	9.62
PCB's and dioxins	0.00	0.00
Oily sludges	426.80	34.14
Halogenated organic sludges and solids	0.00	0.00
Non-halogenated organic sludges and solids	556.96	20.62
Dye and paint sludges and resins	0.00	0.00
Metal-containing sludges	0.00	0.00
Cyanide and metal liquids	0.00	0.00
Non-metallic inorganic sludges	0.00	0.00
Metal-containing liquids	1115.42	278.86
Non-metallic inorganic liquids	105.03	10.09
Contaminated soil	0.00	0.00
Miscellaneous wastes	24.73	5.45
 TOTAL	 2494.00	 378.00

¹ Quantities were projected using 1986 DHS Hazardous Waste Information System data sheets and economic multipliers representative of future anticipated economic growth. Additional data identified by the Toxic Substances Control Division concerning hazardous waste managed by route service haulers were included.

6.3.2 Small Quantity Generator

Small quantity generator (SQG) wastes are expected to exceed large quantity generator totals by over 100% in the year 2000. The two waste groups accounting for the majority of SQG wastes are waste oil and miscellaneous wastes. Waste streams of SQG's are difficult to evaluate, and because of this a DHS suggested waste minimization evaluation method is unavailable.

Although SQG wastes are difficult to evaluate in terms of reduction potential, the wastes make up the largest component of Tulare County's hazardous waste stream and therefore should be addressed. Waste oil is probably the largest constituent of the Tulare County hazardous waste stream and could be minimized using recycling techniques if collection methods are adopted within the County.

6.4 Source Reduction and Recycling Alternatives

Some alternative source reduction and on-site recycling of metal-containing liquids include: evaporation, electrolytic metal recovery (EMR), reverse osmosis and ion exchange. The costs of these alternatives are highly waste and process specific, and therefore a few key considerations should be addressed. The two main considerations are production cost savings and the potential for reducing or eliminating current waste treatment and shipping requirements.

Non-halogenated solvents also have potential for minimization using source reduction or recycling techniques. Source reduction might include, changing from solvent-based to water-based products, electrostatic application methods and solvent vapor loss reduction. Some potential recycling technologies for solvent recovery are distillation, activated carbon absorption, ion exchange and solids removal.

Another waste group which has potential for waste minimization in Tulare County is pesticides. Because the major constituent in a pesticide rinsewater waste stream is water, it may be advantageous to remove the pesticide and recycle the filtered rinsewater. Currently there is an attempt to implement such a recycling process which uses activated carbon as the filter media. This method would minimize the waste stream volume while reducing demand on the local water supply.

Addressing reduction and recycling techniques for small quantity generators becomes difficult due to the locations of the generators throughout the County and the volume and types of waste generated. However, waste oil is one waste group to which SQG's contribute significantly, and could be considered as a potential area for application of recycling techniques. These technologies include on-site filtration, distillation and chemical and solvent treatment. Off-site waste oil recycling, although less attractive due to the need for a collection and transportation system, could also be considered as a technique for minimizing this waste group.

6.5 Barriers to Waste Reduction

Several difficult barriers are faced by hazardous waste generators in developing and implementing waste reduction techniques. These barriers include technical, financial, institutional and physical factors.

Technical barriers impede a firm's ability to develop, evaluate or implement waste reduction methods. These barriers include lack of information on waste reduction methods, lack of in-house expertise to evaluate and implement waste reduction, and absence of readily available technologies.

Financial barriers may prevent a firm from undertaking a waste reduction project, particularly for low volume waste streams. The addition of waste reduction equipment may be economically infeasible.

Finally, institutional barriers can consist of regulatory constraints or result from a lack of awareness and commitment at the decision-making level within waste generating companies. Physical barriers may include the unavailability of land for the installation of waste reduction facilities or the inability of the existing manufacturing plant or smaller business facility to accommodate the necessary equipment.

6.6 Incentives for Waste Reduction

While many barriers exist to impede progress toward waste minimization, enormous incentives are the light at the end of the tunnel. The economics of increasing costs for hazardous waste storage, treatment, transportation, and disposal may reduce operating profits below acceptable levels. Waste reduction also saves raw materials and the costs of regulatory compliance.

Regulatory burdens created by hazardous waste production require biennial reports, waste minimization manifest certification, and permitting for on and off-site treatment of hazardous wastes. In addition, as noted several times in previous chapters, land disposal will be eliminated for untreated hazardous wastes in May of 1990.

Finally, the reduction or elimination of hazardous wastes can benefit operations by reducing liability associated with environmental problems, employee health and safety, and by improving the corporate image among employees and the community.

CHAPTER 7

SITING CRITERIA FOR HAZARDOUS WASTE MANAGEMENT FACILITIES

7.1 Introduction

The selection of sites for hazardous waste management facilities is a critical step in avoiding the possibility of uncontrolled releases of hazardous waste. Numerous conditions may serve to make a site suitable or not suitable for the siting of such a facility. Therefore, it is critical that a comprehensive analysis be made of an area for which a hazardous waste facility is proposed. Factors that must be considered include, but are not limited to, on-site soil types, effects on air quality, impacts upon agricultural lands, proximity to immobile populations, distance to groundwater, proximity to earthquake faults, and potential for ground shaking.

Once a site is selected that meets the criteria contained in this plan, it is important that the facility be constructed in a manner that ensures its structural integrity. For example, it may be appropriate to attach conditions to a project encompassing such subjects as fencing, fire protection, well monitoring, etc., depending on the type of facility proposed and its location.

This plan proposes that a permitting process for such facilities in the unincorporated areas of Tulare County be established in two steps. First, a hazardous waste facilities zone would be included in the Tulare County Zoning Ordinance without application to specific properties. An applicant would apply for a zone change from the current site designation to this new zone. Using the change of zone (COZ) process, the site would be evaluated under the criteria contained in this plan to determine if it is appropriate for the siting of a hazardous waste management facility. The applicant would also apply for a Special Use Permit (SUP). In most cases the COZ and SUP processes would be conducted concurrently. Through the SUP process, appropriate conditions could be attached to the project to ensure its continued safe operation. At least annual reviews of the facility would ensure that any required conditions of the SUP are adhered to by the operator. If not, the facility's Special Use Permit could be revoked and the facility closed.

This Chapter contains the criteria by which sites will be evaluated for the possible location of hazardous waste management facilities. The burden of proof regarding site suitability is placed on the applicant. This is not meant to imply that an applicant's submission would not be verified by staff, rather, it is asserted that the time consuming and possibly costly process of compiling information is the responsibility of the applicant and not that of the County or respective city.

7.1.1 Criteria Development Process

The siting criteria contained in this plan were developed over the course of several months by the Siting Criteria Subcommittee of the Tulare County Hazardous Waste Management Advisory Committee. The subcommittee membership included a geologist, an attorney, an engineer, a water quality expert, a registered consulting sanitarian, and a city council member.

7.1.2 Variance from Criteria in State Guidelines

Several of the criteria in this plan differ from the criteria contained in the State Guidelines. It was the opinion of the Siting Criteria Subcommittee and of the full Advisory Committee that in order to more accurately reflect the needs and concerns of Tulare County and its residents, it was appropriate and necessary to deviate from the criteria suggested by the State.

7.1.3 Criteria Format

The criteria in this plan are divided into general topic headings. Following each criterion is a short statement of justification for that specific criterion. A distinction is made in the criteria between residuals repositories and other types of facilities. Some criteria apply to all types of facilities while others apply to either residual repositories or facilities other than residuals repositories.

7.1.4 Areas in Which Criteria Might be Met

Under Senate Bill 477 (B. Green, 1987), this plan must include a discussion of areas in Tulare County where the criteria might be met. Consideration for siting of facilities will first be given to areas already zoned for industrial uses whether inside or outside of incorporated cities. A change of zone would still have to be secured under the recommended permitting process. Other areas, designated for agricultural uses, may also be appropriate for the siting of facilities. The recommended zone change and/or special use permit process would be followed to determine whether a specific site is suitable for hazardous waste management facilities.

7.1.5 Areas Excluded From Siting Consideration

It is assumed that lands within National Parks, National Forests, other federally designated Wilderness areas and City and County parks are not appropriate for public use facilities due to their unique scenic, historical, or natural resource values.

7.2 Siting Criteria for Hazardous Waste Management Facilities

Seismic

Criterion: *Facilities shall be sited according to California Administrative Code (CAC), Title 22, Section 66391(a)(11)A(1) and (2).*

Justification: The containment integrity of hazardous waste management facilities is directly related to the potential for movement of the earth along fault zones. The California Department of Health Services and the United States Environmental Protection Agency require, as part of the hazardous waste facility permit for new hazardous waste management facilities proposing to locate in California, that an evaluation of seismic activity of the site be completed. The evaluation must show

whether or not active faults or lineations which would suggest the presence of faults, are located within 3,000 feet of the proposed site. If faults or lineations are found within that 3,000 foot radius, no active portion of the facility shall be located within 200 feet of the fault and the facility must be designed in such a manner as to ensure structural integrity in the event of a seismic event.

The section of the California Administrative Code cited in the criterion encompasses the above requirements.

Unstable Soils

- Criterion: *Hazardous waste management facilities shall not be sited in areas where the "natural" slope of the land is greater than 12 percent.*
- Justification: The Tulare County Improvement Standards dictate that road grades may not exceed 12 percent except for short distances due to safety concerns. It would be unacceptable to allow establishment of a hazardous waste management facility with unsafe access. Also, construction of hazardous waste management facilities is to be avoided in areas with natural slopes greater than 12 percent so that reliable containment structures can be ensured.
- Criterion: *An applicant must demonstrate that the soil on which a facility might be developed will not subside or liquefy during a "maximum credible earthquake."*
- Justification: Different earthquake faults have differing ratings as to the "maximum credible earthquake" that can occur along that fault. The criterion is worded in such a manner as to require evaluation of all known faults at the time of review of the proposed facility. New faults are occasionally identified and it is possible that the "maximum credible earthquake" along a specific fault may vary somewhat over time. Applicants should be required to adhere to the most recent and most accurate geologic information available.
- Criterion: *An applicant for a residuals repository must provide information demonstrating that ground subsidence and/or liquefaction have not occurred nor are they likely to occur at the site of the proposed facility.*
- Justification: If subsidence or liquefaction were to occur at the site of a residuals repository, it could result in the release of wastes from containment structures, contamination of groundwater, and pollution of wildlife habitats. In order to avoid any possibility of this type of disaster, no residuals repositories should be allowed in areas subject to either liquefaction or ground subsidence.
- Criterion: *An applicant for hazardous waste management facilities other than residuals repositories must provide information as to whether ground subsidence and/or liquefaction have occurred*

or whether they may occur at the proposed site. If it is demonstrated that ground subsidence and/or liquefaction have occurred or may occur, the proposed facility will have engineered design features to ensure structural stability.

Justification: Hazardous waste management facilities other than residuals repositories can be located in areas subject to liquefaction and/or subsidence provided they are designed to ensure their structural stability should such subsidence and/or liquefaction occur.

Habitat of Endangered Species

Criterion: *The applicant will provide evidence that the proposed project will comply with all existing state and federal laws and regulations including, but not limited to, the California Environmental Quality Act (CEQA), the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA).*

Justification: By requiring applicants to adhere to both State and Federal laws and regulations pertaining to the protection of rare, proposed, candidate, threatened, and endangered plant or animal species, the habitats of said species will be protected.

Proximity to Waste Stream

Criterion: *Applicants for all types of hazardous waste management facilities shall provide information regarding types, volumes, and sources of waste and must demonstrate that the proposed location is within reasonable proximity to waste sources.*

Justification: Although information regarding wastes to be handled by a proposed facility would most likely be submitted voluntarily, it is believed that information should be required to be submitted with the application to ensure that a comprehensive review of the facility is undertaken.

As a part of the application process, applicants must demonstrate the reasoning behind siting a facility in a specific location. It is desirable to encourage facilities to be located in such a manner as to minimize the distances over which hazardous waste is transported. For example, a transfer/collection facility might be desirable within an industrial park area in order to collect wastes from businesses within the park. In the case of a residuals repository, proximity to waste sources is less of a concern than the viability of a site.

Recreational, Cultural, or Aesthetic Areas

Criterion: *No hazardous waste management facilities shall be sited within areas designated as scenic, of cultural, historical, archaeological, or paleontological importance, or of aesthetic value, as defined in state and local plans.*

Justification: By siting a hazardous waste management facility in one of the above defined areas the unique value of said area would be compromised. Areas so identified have been designated to ensure continued protection from incompatible land uses. Hazardous waste management facilities are not compatible with the types of uses noted above and, as such, should not be allowed to locate within such areas.

Distances from Residences

Criterion: *A buffer zone of at least 2,000 feet is required for any hazardous waste residuals repository [Health and Safety Code, Section 25202.5 (b) and (d)].*

Justification: Applicants for permits for hazardous waste management facilities are already required to adhere to the standards and requirements of the State Health and Safety Code. This criterion simply reiterates the requirement that applicants adhere to existing State law.

Criterion: *A risk assessment shall be required when siting any type of hazardous waste management facility.*

Justification: The Guidelines for the Preparation of Hazardous Waste Management Plans indicate that a "risk assessment" is required when evaluating sites for hazardous waste management facilities. However, no definition of a "risk assessment" is provided in the State Guidelines. For the purposes of the Tulare County Hazardous Waste Management Plan, a "risk assessment" shall be defined as an evaluation of the threat to public health and the environment posed by a hazardous waste facility, or other source, considering probability of incident and its effects. The "risk assessment" may be incorporated into the Environmental Impact Report prepared for a project or will be a separate document if an Environmental Impact Report is not required for a specific project.

Agricultural Land

Criterion: *Applicants must demonstrate that the proposed facility will have no adverse impact on lands in agricultural production or lands that have been in agricultural production for three (3) of the previous five (5) years. If it is determined that the proposed facility would result in adverse impacts, the facility could still be located at the proposed site if the applicant can demonstrate that there is no other site available and that the facility is needed to serve the needs of the residents of Tulare County.*

Justification: Agriculture is a major part of the economy of Tulare County and should be protected. The definition of agricultural lands was developed by evaluating the many differing definitions of "Prime Agricultural Lands", all of which include the reference to lands being in agricultural production for three (3) of the previous five (5) years. In addition, due to the reliance of Tulare County's economy on agriculture, the only

justification for using agricultural lands for hazardous waste management facilities is an overriding need of the residents of Tulare County for such a facility.

Prevention of Significant Deterioration (PSD) in Nonattainment Air Areas

Criterion: *No facility shall be permitted that shall degrade present air quality within Tulare County unless authorized and approved offsets or improvements are undertaken.*

Justification: No facility should be permitted in Tulare County that would in any way reduce overall air quality. If authorized offsets or improvements are incorporated into the project that reduce impacts on air quality to the insignificant level, the facility may be allowed.

Mineral Resource Areas

Criterion: *No facility shall be established in areas of important mineral resources as defined by Tulare County and the State of California unless it can be demonstrated that the location of the facility in the mineral resource area in no way inhibits the extraction of the mineral resource.*

Justification: This is a matter of resource protection. In some cases, such as oil field areas, it may actually be desirable to site a facility provided all other criteria can be met.

Major Groundwater Recharge Areas and Aquifers

Criterion: *Applicants must demonstrate that proposed facilities will not be located in any area which has recharge potential or is contributory to an area of recharge potential to an aquifer of demonstrated or potential beneficial use.*

Justification: Possible contamination of groundwater is one of the most serious concerns with regard to the siting of hazardous waste management facilities. Groundwater supplies are a nonrenewable resource that, once contaminated, are extremely difficult to reclaim. In the interest of preserving this resource, no facilities will be allowed to be sited within an area that could result in the contamination of any groundwater system.

Criterion: *Applicants must comply with the requirements of the State Water Resources Control Board and Title 23, Subchapter 15 of the California Administrative Code, "Discharges of Waste to Land".*

Justification: Applicants for permits for hazardous waste management facilities are already required to adhere to the standards and requirements of the State Water Resources Control Board. This criterion simply reiterates the requirement that applicants adhere to existing State law.

Floodplains

Criterion: *Hazardous waste management facilities may not be located in areas subject to 100 year flood events. This includes areas subject to 100 year events assuming existing protection measures were to fail.*

Justification: Title 40 of the Code of Federal Regulations (CFR) states that no hazardous waste residuals repositories shall be located in areas of 100 year flood events. In addition, locating any type of hazardous waste management facility in an area of 100 year flood events could result, in the event of a flood, in major groundwater contamination. Flood protection measures have been known to fail, which is the reason for the inclusion of the areas subject to 100 year flood events should existing flood protection measures fail. Hazardous waste material distributed by flood water could, in addition to polluting groundwater, contaminate surface soils and destroy important wildlife habitats.

Micro-Climate

Criterion: *The applicant shall be required to provide evidence that the proposed facility will not adversely impact local air movement and temperature characteristics.*

Justification: It is possible that location of a facility may affect local air movement patterns and temperature. Large ponding areas, for example, could have localized effects on upslope and downslope wind patterns and temperature variations particularly in the foothill areas. This effect could be of grave significance to foothill agricultural areas. As part of the risk assessment, the applicant must submit evidence that the proposed facility will not have adverse effects on localized weather patterns.

Wetlands

Criterion: *No facilities shall be located in wetlands such as, saltwater, fresh water, and brackish marshes, swamps, and bogs inundated by surface or groundwater.*

Justification: Wetland areas are always located in areas of groundwater recharge potential. Allowing hazardous waste management facilities in these areas would represent an unacceptable risk for groundwater contamination.

Military Lands

Criterion: *Military lands shall not be considered for establishment of public hazardous waste management facilities.*

Justification: It is the policy of the Department of Defense that no public hazardous waste management facilities shall be located on military lands.

Transportation Routes

Criterion: *Hazardous waste management facilities shall have direct access to at least a Federal Aid Secondary route. The applicant shall be required to submit proposed route maps that depict routes from source point or point of entry into Tulare County and minimize emergency response times and public exposure and maximize spill containment capabilities.*

Justification: Roads within the Federal Aid Secondary (FAS) system are generally constructed to specific standards that make them 'better' roads than other regular county maintained roads. Paving and right-of-way widths are greater as is structural capacity of the road. In addition, bridges within the system are inspected every five (5) years to ensure structural stability and repaving and capping must be done to state and federal standards. Funding for improvements is also an issue. While the maintenance of normal county roads is reliant on the availability of county funds, improvements to FAS roads are funded, for the most part, by state and federal funds.

The requirement that facilities have access to well maintained roadways reduces the potential for accidents. Accidents involving vehicles transporting hazardous wastes can result in uncontrolled releases that may seriously endanger persons, property, wildlife, and the environment in general.

CHAPTER 8

PROGRAMS FOR HAZARDOUS WASTE MANAGEMENT

The purpose of this chapter is to present information related to aspects of hazardous waste management not specifically covered in previous chapters, with a specific emphasis on programs for hazardous waste management and the remediation of contaminated sites. Topics to be addressed include transportation, site and facility monitoring, program implementation, emergency response, storage regulations, site contamination, land use controls, small quantity generators, and household hazardous wastes.

8.1 Transportation

Information presented in Chapter 4, Current Waste Generation, and based on the State manifest system indicates that approximately 3,848 tons of hazardous wastes were exported from Tulare County in 1986. Approximately 49 tons of wastes were imported into the county. Projections included in Chapter 5 indicate that 2,970 tons of wastes may be manifested for export in the year 2000. This indicates that less waste may be generated in Tulare County over the intervening years. However, the data does not account for wastes that are, and will be, shipped through the county without stopping.

Two state and two federal statutes primarily control the transportation of hazardous materials and wastes. The state statutes include AB 1861 (Campbell, 1985) and SB 2030 (Hart, 1984). Regulations implementing the requirements of these laws, and others, are located in Title 13 of the California Administrative Code (CAC). AB 1861 authorizes the establishment by the California Highway Patrol (CHP), working with local government, of specified routes, parking and stopping places for transporters of certain specified hazardous materials (explosives, nitric acid, anhydrous hydrazine, and liquid nitrogen tetroxide). The requirements of the "manifest" system are included in Article 2, Subchapter 6, of Title 13. Conditions under which highways may be closed to the transportation of hazardous substances are included in SB 2030.

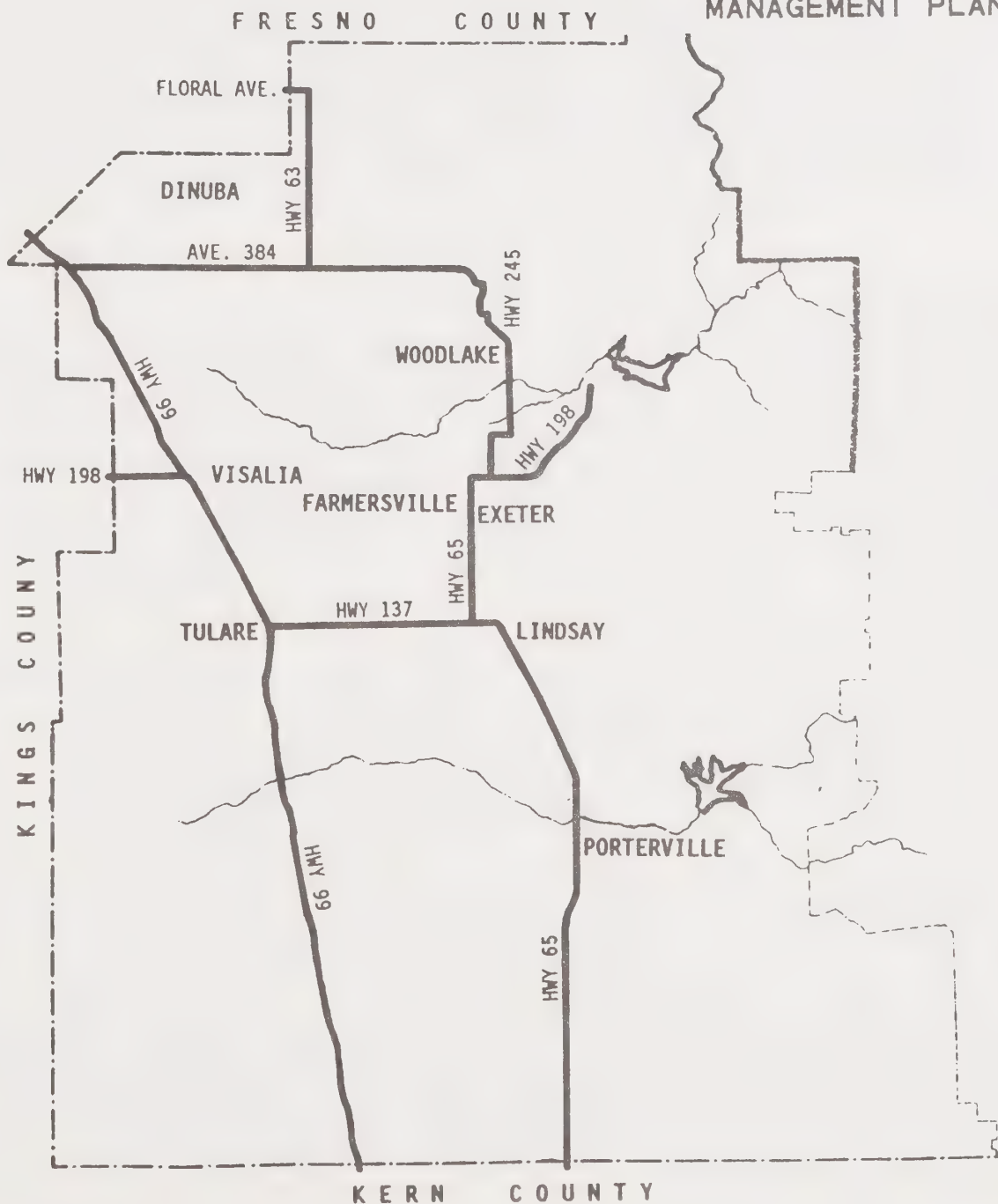
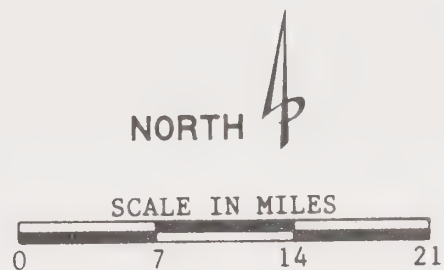
Federal laws directed at the transportation of wastes include the Hazardous Materials Transportation Act of 1974, and the Federal Railroad Safety Act of 1970. The former statute contains requirements for the transportation of hazardous materials and wastes on highways. Many of the federal requirements have been incorporated into Title 13 of the CAC. Local governments do not generally regulate railroads; however, local governments do participate in emergency responses to railroad accidents.

Specific concerns regarding transportation emergencies are discussed in Section 9.4.2.1, Emergency Response - Transportation, of this chapter.

MAP No. 3
ROUTES FOR THE
TRANSPORTATION OF
EXPLOSIVES

California Administrative
Code, Title 13
Subchapter 6, Article 1

TULARE COUNTY
HAZARDOUS WASTE
MANAGEMENT PLAN



8.1.1 Designated Routes

Routes designated under AB 1861 by the CHP are shown on Map No. 3. For additional information regarding safe stopping points for hazardous materials and wastes haulers, the reader is referred to Section 1151 of Article 1, Subchapter 6, Title 13 of the California Administrative Code.

8.1.2 Interstate Transportation

The amount of wastes being shipped out of California from Tulare County is unknown as the analysis prepared for Chapter 4 did not show wastes destined for disposal outside of the State. Certainly, waste destined for other states does pass through Tulare County, on Highway 99 in particular. It is not within the authority of the County to control this process. However, it would be in the interest of the County to monitor the enforcement of State and Federal laws and regulations aimed at controlling route selection and hauling practices, and to participate in the development of new and revised policies.

8.1.3 Facility Siting

The Siting Criteria developed for this plan are located in Chapter 8. The criterion related to transportation requires that hazardous waste management facilities have direct access to at least a Federal Aid Secondary route (Tulare County Department of Public Works). It also requires applicants for the siting of such facilities to submit route maps showing entry points into Tulare County. As expressed in the criterion and in the justification statement for it, it is intended that such routes minimize emergency response time and public exposure to hazardous chemicals and maximize spill containment capabilities. The reader should refer to Chapter 8 for the exact wording of this statement of policy.

8.2 Monitoring of Hazardous Waste Sites and Facilities

Primary responsibility for enforcement of hazardous waste management laws rests with the State and Federal governments. Monitoring reports emanating from their respective agencies are reviewed and evaluated by the Environmental Health Division of the Tulare County Department of Health. Such reports are kept on file with that agency.

With the passage of recent State laws such as AB 2185 (Waters, 1985), Proposition 65, and AB 2948 (Tanner, 1986), the responsibilities of local government for facility and site monitoring are increasing.

The Tulare County Hazardous Materials Unit of the Division of Environmental Health operates a wide range of programs designed to protect our population and environment from toxic risks. California State laws relating to business and industry are enforced. As the administrative agency, the unit personnel inspect, investigate and consult in the areas of above- and below-ground chemical storage, site remediation, and emergency response.

8.2.1 Inspections

A Hazardous Materials Unit was added to Tulare County's Environmental Health Division by Board of Supervisors Resolution No. 86-0853 in June of 1986. The unit was staffed later that year and the program focused initially on the AB 2185 process and use regulation of underground tanks. In mid-1987 the County entered into a Memorandum of Understanding (MOU) with the State Department of Health Services to assume the program responsibility for inspection and regulation of small waste generators (1000 kg or less per month). It is anticipated that in early 1988 the Tulare County Division of Environmental Health will enter into an agreement with the State to conduct the oversight of clean-up activities in the leaking underground tank program.

8.2.1.1 AB 2185 Inspections

Businesses subject to the Hazardous Materials Business Plan Program will be inspected annually by the Hazardous Materials Unit to:

1. ensure compliance with Chapter 6.95 of the California Health and Safety Code,
2. identify existing safety hazards that could cause or contribute to a release of hazardous materials, or
3. suggest preventive measures designed to minimize the risks of release of hazardous materials into the work place or the environment.

8.2.1.2 Underground Tank (UGT) Inspections

Under the authority of the Health and Safety Code, Division 20, Chapter 6.7, the Hazardous Materials Unit makes on-site inspections to:

1. ensure compliance in inventory reconciliation process,
2. observe tank closure/removal and soil sampling procedures,
3. address monitoring problems,
4. respond to contaminated site assessments/unauthorized releases, and
5. observe new tank installations and address safety and mechanical elements.

8.2.1.3 Waste Generator Inspections

A Memorandum of Understanding (MOU) was signed with the State Department of Health Services in September of 1987 which provides for the County to assume the regulatory role for all hazardous waste generators producing 1000 kg/month or less. Under this MOU the Hazardous Materials Unit:

1. makes on-site inspections,

2. coordinates with the Tulare County Hazardous Waste Management Advisory Committee to implement hazardous waste reduction measures, and
3. identifies facilities which may require a hazardous waste facility permit and appropriately refer these matters to the appropriate State agency.

8.2.2 Enforcement and Technical Assistance

The Hazardous Materials Unit, within the Environmental Health Division of the Tulare County Health Department, is staffed with five field personnel and a supervising Environmental Health Specialist. With the full implementation of the programs for which it is now responsible, these staff resources will become inadequate. As some of the more time consuming procedures required to establish these new programs are completed, the inspections and enforcement activities will increase, thereby limiting the amount of time available to give needed levels of technical assistance to business and industry for such efforts as site remediation, waste reduction, and waste minimization. Consideration must be given to this issue if the goals, objectives, and implementation measures proposed are to be realized.

All enforcement activities of the Hazardous Materials Unit are mandated by State law. Tulare County enforces the hazardous materials laws based on the merits of each case. The State and County do associate in the enforcement of the regulations over many of the more difficult cases as provided for in the Memorandum of Understanding.

8.3 Organizational Responsibilities for Implementation

As noted previously, implementation of selected State and Federal hazardous materials and waste management programs in Tulare County is provided by the Environmental Health Division's Hazardous Materials Unit. It is possible to coordinate activities, data and the decision-making process with the responsibility concentrated in this fashion. The unit communicates with the California Division of Forestry (fire services), State Department of Health Services, the Regional Water Quality Control Board (RWQCB), and State Office of Emergency Services (OES) as it conducts coordination, data management, and enforcement activities.

Internally, Tulare County has established a Hazardous Waste Policy Committee. It meets on a monthly basis and is composed of representatives of the Health, Planning and Development, and Public Works departments, Agricultural Commissioner's Office, District Attorney's Office, California Division of Forestry (fire), Building Services and Parks Department, the County Executive's Office and a representative of the Board of Supervisors. The function of the Committee is to monitor the status of hazardous materials handling and contamination on County-owned properties and to recommend preventive and remedial actions and policies to the Board of Supervisors.

The cities within the County have not taken this "committee" approach to hazardous materials and waste management on city-owned properties, tending instead to centralize authority within one department. For example, the Fire

and Emergency Management Division within the City of Visalia monitors hazardous waste related problems and directs and monitors actions by other appropriate departments within city government.

The waste water management divisions within public works departments of cities are responsible for the enforcement of regulations and ordinances pertaining to the introduction of hazardous substances into waste water collection systems and treatment works.

Planning departments within the cities and the County must now require applicants for discretionary land use permits to certify whether their property is or is not on a hazardous waste sites list. This list is generated by the State Office of Permit Assistance pursuant to Section 65962.5(e) of the California Government Code. This list was last released in November of 1987 and is scheduled for update every six months.

For new hazardous waste facility proposals, coordination is effected through the siting process mandated under AB 2948 (Tanner, 1986). With oversight from the State Office of Permit Assistance, local governments form Local Assessment Committees to monitor the permit review process and negotiate and make recommendations regarding mitigation measures for new facilities. The committee may hire an independent consultant to assist with the review of the proposal before it. Each committee remains in existence until the last local, state or federal permit for the particular project is approved or denied. Generally, permits must be obtained prior to development from the local planning agency, the Air Quality Control District, the Local Enforcement Agency (Health Department), the Regional Water Quality Control Board, the State Department of Health Services, and the Federal Environmental Protection Agency. The local planning agency coordinates the review of such proposals by other County agencies, such as fire, police, emergency services, building inspection, and public works, through the special use permit and environmental review processes. The former is established through zoning regulations and the latter under the California Environmental Quality Act (and the National Environmental Policy Act, if applicable).

The role and responsibilities of the Hazardous Materials Unit of the Tulare County Division of Environmental Health are outlined in Section 9.2 of this Chapter.

As is evident from the paragraphs above, numerous agencies participate in both site remediation and review of siting proposals. A major criticism often heard from those who are subject to the regulation and enforcement activities of these numerous agencies is that no one agency has centralized authority. In short, attention sometimes focuses more on the process than on cleanup efforts in particular.

This County Hazardous Waste Management Plan will serve to bring various local agencies and units of government together. Reviews of the County HWMP every three years will also facilitate coordination of plan implementation. This coordination should also improve the regulatory processes as well.

8.4 Emergency Response Procedures for Hazardous Materials Incident

Most of the information contained in Section 9.4 has been drawn from the Multihazard Function Plan, County of Tulare, Office of Emergency Services, 1987.

8.4.1 General Situation

Technological hazards differ from natural hazards in two ways: (1) technological disasters often occur without the slightest warning; and (2) there are few actions that a local jurisdiction can take in preparation for an occurrence other than response training. For an individual citizen, it is nearly impossible to prepare in any way for a technological incident, resulting in a significant burden on the jurisdiction's ability to respond. The release of a hazardous material to the environment could cause a multitude of problems that can be discussed in a general manner. The significance of the problems to the environment, property, or human health is dependent on the type, location, and quantity of the material released. Although hazardous materials incidents can happen almost anywhere, certain areas are at higher risk. Jurisdictions near roadways that are frequently used for transporting hazardous materials and jurisdictions with industrial facilities that use, store, or dispose of such materials all have increased potential for major mishaps, as do jurisdictions crossed by certain railways, waterways, airways, and pipelines.

Releases of explosive and highly flammable materials have caused fatalities and injuries, necessitated large scale evacuations, and destroyed millions of dollars worth of property. Toxic chemicals in gaseous form have caused injuries and fatalities among emergency response teams and passersby. When toxic materials have entered either surface or ground water supplies, serious health effects have resulted. Releases of hazardous chemicals have been especially damaging when they have occurred in highly populated areas or along heavily traveled transportation routes.

The Kern County and the Fresno County Fire departments operate the nearest fully equipped hazardous materials response units. Fire officials in Tulare County are evaluating the potential for the creation of such a unit, locally, or of the potential for a regional agreement for this service.

The majority of the incorporated cities either adopt Tulare County's Emergency Response Plan (ERP) known as the Multihazard Functional Plan, or develop a plan using it as a starting point. This includes Dinuba, Exeter, Farmersville, Porterville, and Woodlake. The City of Visalia maintains its own ERP that includes a hazardous materials response section. At this writing, the cities of Lindsay and Tulare had not responded to this inquiry.

8.4.2 Special Situations

Many forms of hazardous materials are present in Tulare County. They are present in permanent storage locations, roadway and railway transport media, long-distance pipelines, and at various industrial and agricultural application sites. The County's location, astride major rail and highway transport routes, and its role as an agricultural center indicate the potential for serious hazardous materials incidents.

In regard to the agricultural character of Tulare County, one problem expressly noted for inclusion in the HWMP by the Advisory Committee is the issue of pesticide disposal. Of particular concern is the possible illegal storage of outdated or expired chemicals and of used pesticide containers. The potential for harm to the environment and questions of liability are some of the aspects of this problem that need further investigation and action by, particularly, the State and Federal governments.

8.4.2.1 Transportation Systems

The amount of hazardous materials transported over rail and roadways on a daily basis is unknown. There is potential for a hazardous materials incident almost anywhere on the numerous highways and roads that criss-cross the county. The potential is highest along Highway 99 because of the large amount of tanker truck traffic. The most vulnerable areas along this route are the on-off ramps or interchanges.

The juxtaposition of railbeds, petroleum pipelines and storage, highways, and other hazardous materials usage creates the potential for compounding consequences. Rail accidents could close streets and freeways. Highway accidents could endanger rail traffic. Pipeline and storage facility incidents could affect both rail and highway movement. Traffic and perimeter control actions, and rapid and complete coordination with other jurisdictions would be needed to minimize impacts to the public health and the environment.

Some of the concerns with regard to a truck laden with hazardous materials or wastes are the condition of the vehicle and valves, whether or not the vehicle was carelessly loaded and secured, and attention given to proper placarding for rapid identification at time of accident. Locations where waterways (creeks, rivers, canals, drainage ditches) cross or intersect with truck routes should be given special planning consideration, for water can rapidly expand a contaminated area and, in many cases, cause irreparable damage to the environment. While residential and commercial areas are vulnerable to effects of hazardous materials incidents, schools situated along truck routes are especially vulnerable.

While not as prevalent as on truck routes, rail traffic poses a much greater problem when involved in an accident due to the volumes of hazardous materials payloads.

8.4.2.2 Stationary Facilities

Petrochemicals, pesticides, herbicides, and other toxics are stored in quantity (more than 55 gallons or 500 pounds) for agricultural uses at many warehouse, business and farm storage locations throughout the county. Hardware, garden, and other retail stores stock tons of materials in small quantity containers. There are also many licensed pesticides dealers and bulk storage facilities for flammable liquids located in Tulare County.

Pursuant to AB 2185 all handlers of hazardous materials are required to develop and to maintain emergency response plans.

Owners of contaminated sites subject to the Resource Conservation and Recovery Act (RCRA), specifically to the Superfund Amendments and Reauthorization Act of 1986 (SARA), must also prepare an emergency response plan.

8.4.2.3 Casualties

There is high potential for casualties and fatalities from hazardous materials incidents. Injuries and deaths could range from dozens at stationary industrial/commercial spills, up to hundreds from explosions.

Weather conditions may also play a key part in hazardous materials response. High winds or winter "white-out" fogs would hamper warning, evacuation, rescue, and response efforts. Under such conditions, casualties could be higher than might otherwise be anticipated.

8.4.2.4 Long-Term Relocation

Major incidents occurring under poor weather conditions and in particular sections of the County could trigger the evacuation of many persons. The type and size of incident would dictate the duration and extent of evacuation. Most evacuees would not require more than "temporary" care and shelter. However, some extraordinary conditions might demand long-term relocation.

8.4.2.5 Water and Waste Systems

Opportunities for water contamination include the following:

1. Drinking water could become contaminated at the source, at some point in purification procedures, or in the distribution system. Such an event (depending on the hazardous material) could be quite rapid or quite slow in developing consequences.
2. Sanitation systems may become victim to several forms of hazardous materials incidents. Whether accidentally or intentionally introduced into waste water, hundreds of chemical and organic materials can destroy treatment processes. Treatment facility shut-downs could literally "back-up" the life and business of an entire community.
3. Landfills could become incidents unto themselves. If hazardous materials were introduced into the compaction, long-term hazard and complicated cleanup could result. Leachate contamination has occurred at the Visalia landfill which is operated by the County of Tulare. The extent of the contamination is under investigation.

8.4.3 Definitions

Hazardous Material -- A substance or combination of substances in a quantity or form that, when not properly controlled or contained, may pose a significant risk to health, safety, property, and the environment. These substances are used in industry, agriculture, medicine, research, and consumer goods.

(The reader should note that this definition varies from that given in Appendix A. However, this definition is adequate in the context of emergency response.)

Chemical Spill -- Any release of hazardous substance around a site where the chemical is manufactured, used, stored, shipped or piped. Manufacturing plants, fertilizer plants, processors, warehouses, shipyards, railroad yards, truck shipping, and chemical disposal sites are all considered to be vulnerable to dangerous spills.

Illegal Dump Site -- A place where a hazardous substance is intentionally and illegally dumped. Dump sites for chemical wastes must be carefully selected, prepared, and monitored to ensure that human, animal, or plant life is not endangered by a polluted environment. Oftentimes these materials are dumped illegally along roadsides, in open areas, or buried underground.

Transportation Accidents -- These can occur when a vehicle carrying these materials endangers public health or the environment. Because of their increasing use, hazardous substances are constantly being transported by truck, train, ship, plane, or pipeline. Any major highway, railroad, or shipping lane is susceptible to an accident which could release dangerous substances into the environment.

8.5 Storage Regulations

California Health and Safety Code, Division 20, Chapter 6.7, Section 25280 through 25299.6, covers the law governing the underground storage of hazardous substances. This law was implemented by the State of California in August 1985. It mandates that every county without a local ordinance adopt and enforce the regulations set forth in the California Administrative Code, Title 23, Subchapter 16. Tulare County adopted the regulation on July 31, 1984, by Board of Supervisors' Resolution No. 84-1225, directing Environmental Health to be the local implementing agency. Environmental Health works in conjunction with the State Water Resources Control Board and the Regional Water Quality Control Board to carry out the regulations as mandated by the Legislature.

In October 1985, Environmental Health began the task of notifying and requiring the owners of underground tanks to register and comply with the provisions set forth in the requirements for permitting the use of the systems.

FIGURE 8-1

**MEDICAL
EMERGENCY ACTION CHECKLIST
RESPONSE TO HAZARDOUS MATERIAL INCIDENT**

Action	Assigned Responsibility
Determine if specialized equipment is needed for medical personnel operating in the affected area.	Scene Med. Commander Incident Commander
Determine the number and location of casualties that require hospitalization.	Scene Medical Commander
Activate hazard identification procedures.	Fire Department, Health Department Environmental Health
If a large number of casualties have occurred, direct establishment of Casualty Collection Point	Health Officer
Provide field medical care, including triage, near or in affected areas.	Prehospital Care Personnel, Medical Society
Determine capabilities and capacity of hospitals if there is a large number of casualties.	Scene Med. Commander, Health Officer
Request hospitals to activate Disaster Plan if there is a large number of casualties.	Scene Med. Commander
Dispatch units to pick up injured.	Scene Commander via Dispatch
Allocate casualties to hospitals to make best use of facilities.	Scene Medical Commander
Notify medical personnel with specialized training and assign them to medical facilities commensurate with area requirements.	Health Officer, Base Hospitals
Coordinate distribution of specialized medical supplies.	County Purchasing
Periodically poll medical facilities to determine caseload and support requirements.	Health officer, Base Hospitals
Activate plans for supplementary services such as public information, records, and reports.	Emergency Services
Inform the emergency Public Information Officer of current information for public dissemination.	Health Officer

(Figure 8-1, continued)

Action	Assigned Responsibility
Request assistance from the Regional Disaster Medical/Health Coordinator as required.	Health Officer Emergency Services
Coordinate with the Movement Coordinator, the movement of patients from any medical facility threatened by a hazardous material release.	Medical Facility, Health Officer, Emergency Services

Source: Multihazard Functional Plan, County of Tulare, Office of Emergency Services, Volume 2, Appendix D-2, page 1, 1987.

8.5.1 Underground Storage Tanks

The underground tank program deals with five distinct but interacting sections of the regulations which are:

1. Construction, installation, and monitoring of new tank systems,
2. Maintenance and monitoring of existing tanks,
3. Reporting requirements of unauthorized releases,
4. Permanent closure of tanks, and
5. Permitting conditions.

Article 3 specifies requirements for new tank construction standards which include the use of compatible and durable materials, inspections of installations, installation testing of the systems, and the monitoring of the systems once placed into operation. All new and repaired systems must be secondarily contained to prevent and detect any leakage prior to the point of soil or groundwater contamination. In order to achieve this, new installations are required to install and maintain continuous audible and visual electronic devices.

Existing tanks are the area of most concern due to the possibility of contamination from mismanagement or poor installation practices. Article 4 specifies monitoring alternatives which must be followed in order to be permitted for operation. Presently there are eight alternatives from which tank owners may select. The alternatives direct owners to monitor their tanks by annual precision tightness tank testing, by constructing vadose or groundwater monitoring wells dependent upon beneficial groundwater usage, and by either

daily or weekly product reconciliation or gauging depending on capacity, product, and usage. Existing tanks are also limited to the type and extent of repair allowed.

Contamination of the soil or groundwater by hazardous substances from petroleum or chemical products may occur from the tank, associated piping, overfilling or spillage. Any suspected or confirmed unauthorized release of hazardous substances from underground tanks must be reported to the Environmental Health Division within 24 hours and followed up in writing within 5 working days by the owner or operator of the tank.

Releases are required to be reported to the State and Regional Water Quality Control Boards. Releases which threaten or impact beneficial groundwater are required to be reported, following Proposition 65 procedures, within 48 hours.

Any underground tank which cannot comply with the regulations must be permanently closed. Many owners or operators of existing tanks have chosen to abandon their tanks in lieu of maintaining them as set forth by the regulations. Abandonments may be accomplished by in-place closure or removal. In both instances, representative soil samples must be obtained from beneath the tank and piping in undisturbed native soil. Soil samples from areas which indicate contamination of petroleum products, which have a potential of reaching or affecting beneficial water, must be further assessed to determine the extent of contamination. Each noted contamination is site-specific and must be addressed as such. When no contamination is verified, in-place tank closures may be cleaned and cement slurried in place. When the tanks are removed, sites which are not contaminated may be backfilled, compacted and noted as such.

Underground storage tanks may be permitted for operation only when all the requirements are met per the regulations and all fees imposed by the State and Tulare County have been paid. At a minimum, annual inspections are performed on each tank system to determine compliance of maintained equipment, monitoring procedures, emergency notification and operational procedures with regulations.

8.5.2 Above Ground Storage

Above ground tank installations are reviewed by fire service, air pollution control districts and planning departments. Installations are limited to qualifying sites. New State regulations are expected to be promulgated in the near future to address above ground hazardous materials storage.

8.6 Contaminated Sites

Wastes generated during remediation procedures at contaminated sites are a major source of the hazardous waste in California. As reported in Chapter 4, contaminated sites include Bond Expenditure Plan sites (State and Federal), Proposition 65 reported sites, leaking underground tanks, abandoned sites, pre-RCRA (Resource Conservation and Recovery Act of 1976) hazardous waste landfills and other closed inactive sites. Many sites have yet to be discovered. In general, wastes removed during site cleanups are manifested and included in the Hazardous Waste Information System (HWIS) data base.

For the purposes of this analysis, contaminated sites were determined by manifested quantities of typical site remediation wastes. These wastes include

contaminated soils, California Waste Category Code-611, and asbestos-containing wastes, Code-151. Additional one time only cleanup sites were identified using HWIS data, which highlights these sites by a 1X prior to the facility name on the HWIS list.

Results indicate that twelve site remediation projects were in progress within Tulare County during 1986 with a total waste volume of 770.52 tons. This represents approximately 12 percent of the entire county's hazardous waste stream. The largest contributors are contaminated soil, totaling 762 tons, and asbestos-containing waste totaling 5 tons.

8.6.1 Location and Status

The list of contaminated sites as contained in Appendix D and as it appears graphically on Map No. 4 is divided into three sections: Industrial Waste Sites, Contaminated Public Wells, and Underground Storage Sites.

Many of the industrial waste sites in Tulare County are in the beginning stages of remediation that will require many years of work. The clean-up progress of each site is monitored by the appropriate lead agency. The lead agency where groundwater has been contaminated is the Regional Water Quality Control Board (RWQCB). Federal Superfund sites are monitored by the U.S. Environmental Protection Agency while State Superfund sites are under the control of the California Department of Health Services.

The list of contaminated public wells has been compiled from information collected in a program initiated under Assembly Bills 1803 (1985) and 3750 (1986) and from all other files known to the Tulare County Health Department.

The list of underground storage sites was developed by field staff from the Environmental Health Division. Approximately 30 sites are thought to involve groundwater contamination, another 28 are thought only to involve soil contamination, and the status of the remaining sites is unknown pending further investigations.

Plan Sites for the Cleanup Bond Act of 1984.

Tulare County currently has eight sites reported by the California Department of Health Services. They are each in the process of being cleaned up.

1. Beckman Instruments, Inc.
167 West Poplar Avenue
Porterville, CA 93257
2. Goshen Construction Site
APN 075-250-30-000
Visalia, CA 93279
3. Harmon Field
Airport Road and Terra Bella Road
Pixley, CA 93256
4. Kaweah Crop Duster
Green Acres Airport
2530 West Goshen
Visalia, CA 93219

5. Southern California Gas Company
216 South "O" Street
237 South Uruapan Street
Dinuba, CA 93618
6. Stanley Bostitch, Inc.
6941 West Goshen Ave.
Visalia, CA 93291
7. Village Market
4620 Avenue 228
Tulare, CA 93724
8. Southern California Edison Co.
Visalia Pole Yard
Visalia, CA 93277

8.6.2 Programs for Cleanup

The following programs direct cleanup activities at the Federal, State and local level.¹

1. Federal (Superfund Amendments and Reauthorization Act of 1986) Title III. Although enacted as part of the 1986 SARA amendments, Title III sets out an independent regulatory initiative for reporting and emergency response planning.
2. County Hazardous Waste Management Plans (Tanner Bill, AB 2948). CHWMPs will project hazardous waste (HW) generation, and define procedures for siting of needed new facilities. This process will meet SARA's 1989 requirements for state capacity.
3. Resource Conservation and Recovery Act. Federal hazardous waste control law which establishes controls on facilities that generate, transport, treat, store, or dispose of hazardous wastes, in order to reduce risks of unauthorized releases. Includes national underground storage tank program.
4. State Superfunds. The Carpenter-Presley-Tanner Hazardous Substance Account Act creates a fund to provide the state share of Superfund cleanups, and for cleanup of sites not on the National Priority List.
5. Toxic Pits Cleanup Act (Katz Bill). State law restricts use of surface impoundments for storing hazardous wastes.

¹ The reader should refer to Appendix A (Glossary) and Appendix C (State and Federal Laws) for additional explanation.

6. State Regulation of HW Associated with Solid Waste Disposal Facilities. Calderon Bill addresses the risk of hazardous waste leaking from solid waste disposal sites; studies may identify additional Superfund sites. Eastin Bill creates what amounts to a state superfund program for solid waste landfill sites.
7. State Hazardous Waste Control Law. Basic state framework of hazardous waste regulation.
8. Hazardous Waste Management Act (Roberti Bill, SB 1500). State law continues phaseout of land disposal of hazardous wastes.
9. State Underground Storage Tank (UST) Regulation. These programs identify contaminated sites, and help prevent future contamination. A new pilot program will allocate State Superfund money to Tulare County's UST programs for oversight of cleanup efforts.
10. Proposition 65. Prohibits discharges of carcinogens and reproductive toxins. Requires designated government employees to report all illegal discharges of hazardous waste.
11. Toxic Air Contaminants. A growing body of state law establishing monitoring and emission control programs, implemented by the Air Resource Board (ARB) and the Air Quality Maintenance Districts/Air Pollution Control Districts (AQMDs/APCDs).
12. Clean Air Act. Federal law to protect ambient air quality, which includes provisions for monitoring and control of toxic air emissions. Air quality Solid Waste Assessment Test (SWAT) data can be integrated into implementation activities of ARB and AQMDs/APCDs.
13. Porter-Cologne Water Quality Control Act. Basic state law intended to protect water quality, implemented by SWRCB and RWQCBs. Water quality SWAT data useful to broader goals.
14. Drinking Water Monitoring (AB 1803). This program may identify additional contaminated sites.
15. Household Hazardous Waste Control (AB 1809, Tanner). Encourages local governments to create programs for the safe management of household hazardous waste, to be funded by increase in solid waste fees.

Legislation addressing hazardous waste management continues to increase at all levels of government. As of February 1, 1988, the State legislature was considering ten bills affecting the cleanup and enforcement aspects of toxic management programs. The sheer number of State and Federal laws creates monitoring and enforcement problems.

It may often be difficult to determine lead agency status for a particular site. Multiple agency responsibility causes confusion for those that bear responsibility for the original contamination and/or site cleanup. Program planning by local government is made difficult due to the great complexity of the hazardous waste problem, and sometimes because of inadequate and unpredictable funding.

8.6.3 Land Use Controls

Approaches taken by the County and the cities to land use control regarding hazardous waste management are briefly summarized in Chapter 1, Section 1.4. The efforts of planning agencies are directed toward prevention through the environmental (CEQA) and special/conditional use permit processes. Where conditions of approval of these permits are violated, permitting agencies can bring action to revoke a permit.

Authority to declare property as a hazardous waste property or a hazardous waste border zone property rests with the State Department of Health Services. This authority is established by Article 11, Hazardous Waste Disposal Land Use, beginning with Section 25220 of the Health and Safety Code. Under this statute, a property owner, lessor, lessee, city, or county can petition the Department of Health Services (DHS) to have a particular property so designated. Such an action can also be initiated by the DHS. The statute establishes due process for such designations and establishes the authority of the DHS to limit the intensification of land uses on property so designated. This includes the authority to declare development moratoria.

At this point none of the local jurisdictions in Tulare County has specifically sought development moratoriums on or adjacent to any contaminated sites. None has sought to establish hazardous waste border zones surrounding known contaminated sites. A number of applications, under Section 25220, have been made to the State Department of Health Services for designation. To date, no applications have been processed to the point of designation due to the liabilities associated with that action.

Agencies responsible for the identification of contaminated sites need to be certain that local agencies are adequately informed of the location of such sites and of the extent of any contamination. Some effort to consolidate the many lists of contaminated sites has been made under AB 3750. However, this list is not all-inclusive and often presents data in a format that makes it difficult to use. The AB 3750 list dated November 1987 was used as the starting point for the site list presented in Appendix D.

With regard to the siting of new hazardous waste management facilities, the new siting procedures under AB 2948 that requires the appointment of a Local Assessment Committee have increased the amount of public involvement in the siting process. The intent of these provisions is to improve the likelihood of the siting of new waste management facilities, while providing the community with assurance that the quality of life of the community and the environment will not be degraded. The requirements for the development of county (AB 2948) and city (SB 477, B. Greene, 1987) hazardous waste elements to their respective general plans give greater credence to existing zoning procedures, and should decrease the likelihood that new development will become the contaminated sites of the future.

8.7 Small Quantity Generators

The small quantity generator in California is a business that produces less than 100 kg (kilograms) of hazardous waste per month. There were approximately 390 small quantity generators in Tulare County as of January 1, 1988. They primarily include such businesses as automotive services, dry cleaners, printers and copy services, jewelers, and photo developers.

The largest single component of the waste stream generated by this group is petroleum waste (waste oil, cutting oil and lubricants). A management program for small quantity generators that would encourage recovery and proper handling of these materials would be of considerable benefit to this group of generators and could significantly reduce the overall size of the waste stream.

8.8 Household Hazardous Waste

Toxic materials in the home have created concern from both government agencies and householders alike. You don't have to look very far to find household products that contain hazardous chemicals. Everyday the kitchen drain and the garbage truck carry most of the American family's discards away from the home, but no longer can we accept the attitude of "out of sight, out of mind". Household hazardous waste constitutes a significant component of the waste stream and contributes significantly to local landfill and water contamination problems.

Household hazardous waste (HHW) contributes approximately 14 percent by weight to the total hazardous waste stream for Tulare County. The methodology used to estimate this amount was based on the 1986 population of 282,984. Each person in the population contributes to the problem. Waste oil is the largest waste group, totaling approximately 688 tons per year.

There currently are very few sites identified by the California Waste Management Board where household generated waste oil is accepted. This may be an area of focus in program development in dealing with HHW. A list of businesses that accept waste oil can be obtained by calling (1-800-732-9225). Businesses accepting waste oil should be encouraged to identify themselves by placing signs in prominent locations.

As the public becomes more educated about ways in which to substitute non-hazardous material for the hazardous ones in the home, and they begin to purchase smaller quantities of chemicals, using all that they buy, a decrease in this waste stream can be expected. Significant decreases in volume will still require a great deal of effort such as recovery and recycling relative to waste oil and items that may have economic recycling value. Businesses and industry can assist the education effort by providing information programs for their employees.

A well developed curriculum has been presented to the public school systems for review and adoption by the Tulare County Hazardous Waste Management Advisory Committee. Education may very well prove to be our most effective long term reduction methodology. Currently pending are several household hazardous waste collection days proposed to be sponsored by various groups within the County.

AB 1809 (Tanner, 1986) authorizes any city or county to fund the new HHW program by increasing its solid waste fees, or by authorizing a franchised or permitted private solid waste collector to levy service charges or assessments. No reimbursements are available from the State. However, grants may be available to local government from the new Solid Waste Disposal Site Cleanups and Maintenance Account created by AB 2448 (Eastin, 1987) as part of what amounts to a solid waste Superfund program.

8.9 Public Education and Participation

The composition and statutory functions of the Tulare County Hazardous Waste Management Advisory Committee (HWMAC) are presented in Section 1.2 of Chapter 1. A list of the membership of the committee is presented on the Acknowledgments Page at the beginning of the HWMP.

8.9.1 Public Participation During Plan Development

To carry out its responsibilities to inform the public and to encourage participation by the public during development of the DRAFT HWMP, the committee and staff did and have planned the following:

1. A meeting notice and agenda were released to fourteen newspapers and 25 radio and television stations in advance of each meeting of the HWMAC. A copy of the meeting notice and agenda was also sent to the staff of each of the incorporated cities within the county, and to staff members active in the Tanner process in the counties of Kern, Inyo, Kings, and Fresno. The members of the Tulare County Planning Commission and of the Board of Supervisors received and agenda for each meeting as did at least one staff member in the following County departments: Planning and Development, Environmental Health Division, Agriculture Commissioner, Building Services and Parks, Public Works, County Counsel, Health Department Administration, and the County Executive Office. Local chapters of the Sierra Club and Audubon Society, and representatives of a group calling itself Citizens for a Healthy Environment, were noticed for each meeting.

Committee meetings were held on August 13, September 16, September 30, October 21, and November 18, 1987; January 20, February 17, March 2, and March 16, 1988.

Meetings were held in the cities of Visalia, Porterville, Exeter, Tulare, and Dinuba. Subsequent meetings will be similarly rotated throughout the county.

2. Prior to submittal of the DRAFT HWMP to the State Department of Health Services, presentations were made by committee members and staff to the Chambers of Commerce of Porterville, Farmersville, and Visalia. An offer to give a presentation was made to all of the Chambers within the county.
3. Arrangements have been made for staff and the Chairman of the HWMAC to participate in a radio talk show heard throughout the county on April 7, 1988.
4. During the review of the DRAFT HWMP, presentations have been arranged before the Tulare County Economic Development Corporation, and the South San Joaquin Valley League of Cities. Other similar presentations will be arranged as the opportunity arises.
5. A public forum regarding the DRAFT HWMP has been scheduled for April 27, 1988. Other such meetings will be scheduled for the months of May and June.
6. This schedule of events will be augmented throughout the planning process with public hearings required under the California Environmental Quality

Act, the approval and adoption process under AB 2948, and the General Plan and Zoning Ordinance adoption processes under California planning, zoning, and development laws.

8.9.2 Public Participation and Plan Implementation

The Tulare County Hazardous Waste Management Advisory Committee is expected to continue to play a leading role in the area of public participation once the HWMP is approved. The committee is a standing advisory committee to the Tulare County Board of Supervisors and will continue to advise the county regarding plan implementation. Staff support for the Advisory Committee will be provided by the Tulare County Planning and Development Department and by the Division of Environmental Health.

Because of its strong technical and regulatory role for the implementation of toxics programs, the Hazardous Materials Unit of the Tulare County Division of Environmental Health is likely to continue to have more direct daily contact with the public relative to hazardous waste management than other local agencies.

City and County planning agencies will continue to be focal points for public contact and input by virtue of their roles in the land use permit process. They will manage the facility siting process.

Effective plan implementation and public participation can only occur if specific agencies and organizations are assigned responsibility for the implementation of each of the many components of the hazardous waste management process. To accomplish that specific agencies have been assigned responsibility for each of the implementation measures contained in Chapter 3.

8.10 Ongoing Data Collection and Data Management

"Because data needs are primary, and because so much detail is potentially relevant to the implementation of a source reduction program, there is a temptation to make ambitious study plans and then await complete results -- perhaps for several years -- before taking any further steps."¹

This is unnecessary. An incremental approach seems to be the most logical choice. In consideration of the alternatives, Tulare County has instituted a data management system under the requirements of certain State law; however, as is suggested in the guidelines, each county will receive significant new information (from the State) which changes the needs assessment, between plan revisions.

¹ Approaches to Source Reduction, The National Defense Fund, June 1986.

As has been previously mentioned, the data sources are as follows:

<u>Discharge Type</u>	<u>Data Source</u>
Wastewater	Sanitation district
NPDES discharge	Regional WQCB/EPA
Air discharge	Local APCD
Hazardous waste	DHS/County Environmental Health
Hazardous materials storage	Local Emergency Response Agency or other appropriate agency
Household hazardous waste	Environmental Health Services

Implementation of centralized data storage for all hazardous streams is regarded as a long-term goal requiring statewide coordination. This system should also accommodate information on all hazardous materials and waste management programs in the county which are currently being implemented.

8.11 Funding

No building is any better than its foundation. The analogy is true for the Hazardous Waste Management Plan in regard to funding for both planning and program implementation.

The preparation of this plan has been funded by the State Department of Health Services under provisions of AB 2948 (Tanner, 1986), and AB 46 (Tanner, 1987). It is unclear with the release of the DRAFT HWMP as to whether or not the amount provided will cover the costs of completing the planning process. This issue, the funding for plan updates, and for program implementation must be considered for additional legislative action if the State of California is to gain control over the problems associated with hazardous waste management.

The majority of activities listed in the implementation section (Chapter 3) are not currently funded in city or county budgets. Existing and potential funding sources are listed below. The list is not considered inclusive under the assumption that funding alternatives will be a major topic of discussion with the Legislature, both State and federal, and other interested organization.

1. State Hazardous Waste Reduction Grants. State Hazardous Waste Reduction Grants are made available under AB 685 (Farr, 1985). A total of \$1,000,000 is made available annually through the State Department of Health Services' Waste Reduction Demonstration Grant Program. Generally, initial grants are made for 50 percent of program costs, but may be made for a higher percentage if the program can be made financially self-supporting. Such programs are often supported by generator permit fees levied for hazardous waste generator inspections and/or business plan development.
2. Solid Waste Disposal Site Hazard Reduction Grants. This is a grant program created under the Solid Waste Disposal Site Hazard Reduction Act of 1987 (AB 2448, Eastin) and aimed at efforts to prevent the introduction of hazardous waste into the solid/municipal waste stream. Grants are made under Section 66799.40 of the Government Code to cities and counties for household hazardous waste collection programs and for enforcement programs

designed to prevent the disposal of hazardous waste in landfills. Funding levels are uncertain at this time, but additional information is available by contacting the California Waste Management Board.

In addition to grants, Section 66799.42 of the statute provides that cities or counties may adopt a schedule of fees to be collected from local solid waste landfill operators. Such fees "shall be established in an amount sufficient to pay only those reasonable and necessary costs for the preparation, operation, maintenance, and administration of a program to ensure that hazardous waste is not improperly disposed of in a solid waste landfill."

3. Fee on Off-site Waste Management Facilities. Section 25173.5 of the Health and Safety Code, added by AB 2948, allows local governments to collect a "gross receipts tax," a levy of up to 10 percent of the gross receipts of any off-site multi-user facility used for the storage, treatment, or disposal of hazardous waste. This is a future funding option should such a facility be sited in Tulare County. The use of the funds is at the discretion of local government. However, this source of funds may be subject to the so called "Gann" spending limit, a cap on local government expenditures, and may require a ballot measure prior to implementation. This issue needs further investigation.
4. Federal Funding Programs for Local Government. There are no federal funding programs at this time for local hazardous material and hazardous waste programs other than cleanup moneys available through the federal superfund program (Comprehensive Environmental Response, Compensation and Liability Act of 1980). The federal government is a potential source of funding. Local governments could consider joint efforts to generate program funding at this level.
5. State Funds for Cleanup. The State "superfund" program is implemented under the California Hazardous Substance Bond Act of 1984. Both this program and the federal superfund program provide funding for emergency or remedial action to clean up sites contaminated with hazardous waste. Both of these programs have long waiting lists for funding with only a limited number of sites being chosen for remediation annually.
6. Public and Private Sector Funding for Private Sector Programs. Internal and private institutions are obvious sources of funding to the private sector. Through the Pooled Loan Marketing Corporation (PLMC), the private sector has initiated efforts to provide nontraditional hazardous waste management financing for smaller businesses. Additional information for this program may be obtained from Miller and Schroeder Municipals located in Solano Beach, California (inclusion of this information in this document does not constitute endorsement of this program).

Some public sector funding programs are available. Some of the better known programs are (1) the State Small Business Waste Reduction Loans and Loan Guarantees Program (SB 788, Garmendi, 1986); (2) the Federal Small Business Administration's Pollution Control Facility Payment Guarantee Program; and (3) the State Pollution Control Financing Authority, an independent state agency.

These programs have specific limits as to the amount of funds that can be made available and most have significant application packaging requirements. The costs and conditions of each program should be thoroughly investigated by any firm desiring to utilize one or more of them.

7. Local Funding Sources. The Hazardous Materials Unit of the Tulare County Division of Environmental Health operates user fee based programs for underground and aboveground tank storage inspections and, pursuant to AB 2185, collects fees from small businesses for permits and inspections from those that store and use hazardous materials. The Environmental Health Division also operates fee based programs for the inspection of selected public water systems.

The municipal garbage collection fee is a potential source of funding for both cities and counties particularly in the area of the management of household hazardous wastes. Either local unit of government could use this approach to fund such a program. Further investigation is needed to determine the appropriateness of this approach in Tulare County.

The Hazardous Materials Unit is also the coordinating agency for implementation of the County's Multihazard Functional Plan (emergency response). It must be noted that the County takes the lead in the actual clean up of emergency hazardous material/waste spills, usually associated with transportation accidents, only when a clear indication is present that the agency/company/individual responsible for the incident is capable of repaying the clean up costs. Where costs recovery is questionable, or not possible, the County defers to State agencies including the Regional Water Quality Control Board and/or the State Department of Health Services.

8.12 Plan Monitoring and Evaluation

The HWMP, if it is to be effective, must be monitored and evaluated as conditions change and additional information becomes available. This first version of the plan has limitations brought on largely by the incompleteness of much of the waste generation and disposal data. The potential for waste reduction, although estimated in Chapter 7, is not well understood; the State Department of Health Services has yet to issue requirements and guidelines for preferred methods of treatment for many waste products; future economic development is always uncertain; and, the ability of "technology" to deal with new requirements is at best uncertain. In addition, the amounts of wastes that will be generated by the cleanup of contaminated sites are, for now, a best guess only.

There are other sources of uncertainty as well. These include new regulations and laws, both local, state, and federal, new product development, and new understanding about the short-term and long-term effects of toxic substances on human health and the environment.

The first step in the plan implementation, and accountability, process has been to assign responsibility to specific agencies and organizations for the implementation measures outlined in Chapter 3. Secondly, regular evaluations of progress made need to be provided to the legislative bodies of the County and the cities. Review of implementation progress on an annual basis by the Tulare County Hazardous Waste Management Advisory Committee could facilitate the process. The committee's review would culminate with the submittal of a report to the respective legislative bodies. Under AB 2948, evaluations of

plan implementation are to be made and presented to the State Department of Health Services on the third anniversary of that agency's approval of the HWMP. The financial needs, tools, and other resources for implementation need to be considered annually by each responsible agency identified in Chapter 3. Where feasible, coordination by these agencies could be of benefit.

CHAPTER 9

ENVIRONMENTAL IMPACT REPORT

Time has not permitted the drafting of Chapter 9 for inclusion in the PRELIMINARY DRAFT of the Tulare County Hazardous Waste Management Plan. This section of the Plan will address subjects required by the California Environmental Quality Act. Subject areas to be covered include, but may not be limited to, the following:

1. A brief summary and project description,
2. Environmental impacts of the proposed project found not to be significant,
3. Significant environmental impacts of the proposed project,
4. Significant effects which cannot be avoided if the proposal is implemented,
5. The relationship between local short term uses of man's environment and the maintenance and enhancement of long-term productivity,
6. Any significant irreversible environmental changes which would be involved in the proposed action should it be implemented, and the growth-inducing impacts of the proposed action, and
7. Alternatives to the proposed action.

A revised version of the document containing this additional information will be released during the public review process to be conducted between April 1 and June 30, 1988.

APPENDIX A

GLOSSARY

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GLOSSARY¹

Abandoned Site: An inactive hazardous waste disposal or storage facility which cannot be easily traced to a specific owner, or whose owner has gone bankrupt and subsequently cannot afford the cost of cleanup, or a location where illegal dumping has taken place.

Abatement: A method of reducing the degree of intensity of pollution, such as the restoration, reclamation or recovery of natural resources adversely affected by said pollution, also the use of such a method.

Absorption: A process for removing low concentrations of organic materials from gaseous and watery waste streams. The organics are attracted to the surface of a substance, usually carbon.

Acid: A large class of substances that form solutions having a low pH. Stronger acids are corrosive to metals and other materials. Acids may be neutralized by being mixed with bases or alkalis to form salts.

Acid Waste: A waste with a pH less than 7. (The pH scale shows increasing acidity as numbers decrease from 7 toward zero. Anything above 7 is alkaline, or "basic.") An acid waste is hazardous when its pH is 2.0 or less. See "pH."

Activated Carbon: A highly adsorbent form of carbon used to remove odors and toxic substances from gaseous emissions. In advanced waste treatment, it is used to remove dissolved organic matter from waste water.

Activated Sludge Treatment: Exposing wastes to microorganisms and air. A portion of the organic matter is oxidized to carbon dioxide and water and the other portion is synthesized into new microbial cells.

Acute: Effects which are manifested soon after exposure to a hazardous material.

Advisory Committee: The Advisory Committee which is required in AB 2948, Section 25135.2. Although the law specifies some of its members as to the interest groups they represent, the Committee can be as large as desired by the planning agency developing the Plan. Its meetings should be open to the public; it should represent major interest groups in the planning area and should meet frequently throughout the development of the Plan. Although the Plans developed by regional agencies are not required to be developed with the help of an Advisory Committee, one could be helpful in identifying issues and developing support for the Plan.

1. Descriptions of terminology appearing in regulations or codes are paraphrased. References to original sources are given for further investigation by the reader.

Aeration: To circulate oxygen through a substance, as in waste water treatment where it aids in purification.

Aerobic: Occurring in the presence of free oxygen.

Air Pollution Control Districts/Air Quality Management Districts (APCDs/AQMDs): County and Regional agencies established to administer and enforce minimum standards for air quality.

Alkaline Waste: A waste with a pH between 7 and 14. An alkaline waste is hazardous when its pH is 12.5 or greater.

Alternative Technology: Defined by the Department of Health Services to mean the application of technology to the reduction of waste generation, promotion of recycling, and alternatives to land disposal of hazardous waste.

Ambient: Existing conditions of air, water and other medium at a particular time.

Ambient Air Quality Standards: Specified maximum average concentrations of pollutants over stated lengths of time, allowed by air quality regulations of local, state or federal agencies.

Amendment: Formal changes to an adopted CHWMP. The Plan amendment process includes recognition of the need for revision of the Plan at either regular or intermittent times. All or part of the Plan may be revised and amended as needed.

Appropriate Agreements: When this term is used in the Guidelines, the Department is expressing its understanding that agreements between jurisdictions will be individually developed to meet unique goals and should not be expected to be carbon copies of agreements reached between other jurisdictions. Nevertheless, the agreements should address the hazardous waste issues and express the agreements reached between the signatory parties in a legally binding manner.

Approved Plans: County, multi-county or regional hazardous waste management Plans (CHWMPs) approved by the Department.

Aqueous: Of, relating to, or comprised mostly of water.

Aquifer: A geologic formation, group of formations or part of a formation capable of yielding a significant amount of ground water to wells or springs. (CAC, Title 22, Section 66011.1)

Ash: The incombustible material that remains after a fuel or solid waste has been burned.

Authority to Construct: An authorization, issued by Air Pollution Control Districts and Air Quality Management Districts, which is required prior to construction for proposed facilities which will emit a significant amount of pollutants to the atmosphere.

Base: A substance which forms a salt when it reacts with an acid. Bases have a pH greater than 7.

Best Feasible Hazardous Waste Management Technologies: The best demonstrated available technologies as determined by the Department, or technologies which meet the current state and federal requirements for treatment and/or disposal.

Bill of Lading: A receipt listing goods shipped, issued by a common carrier.

Binding Arbitration: A process for the resolution of disputes. Decisions are made by an impartial arbitrator. The decisions of the arbitrator are final and acceptance of these decisions must be agreed to in advance.

Bioaccumulative: Substances that increase in concentration in living organisms (that are not readily metabolized or excreted) as they breathe contaminated air, drink contaminated water, or eat contaminated food.

Biological Treatment: Treatment processes utilizing living micro-organisms to decompose organic hazardous wastes into simpler organic or inorganic substances. The five principal techniques include activated sludge, aerated lagoons, trickling filters, waste stabilization ponds, and anaerobic digestion.

Biosludge: Sludge generated in biological treatment of organic wastes, composed primarily on micro-organisms.

Boiler: A pressure vessel designed to produce vapor from liquid by the application of heat.

Btu (British thermal unit): The quantity of energy required to raise the temperature of one pound of water by one degree Fahrenheit (°F) at or near 39° F.

Buffer Zone: An area of land which surrounds a hazardous waste facility and on which certain land uses and activities are restricted to protect the public health and safety and the environment from existing or potential hazards caused by the migration of hazardous waste. (Health and Safety Code Section 25110.3)

California Air Resources Board (CARB): A state-wide agency, established by the Mulford-Carrell Act of 1967, responsible for coordinating efforts to attain and maintain ambient air quality standards, for conducting research into the causes and solutions to air pollution, and for regulating motor vehicles to reduce air pollution.

California Waste Exchange: A system for hazardous waste information sharing between generators and other firms to facilitate the transfer of wastes from the generator to firms that can use wastes as raw materials.

Cancer: A collection of about 200 diseases grouped together because of their similar growth processes. Each cancer, regardless of the part of the body it affects, is believed to originate from a single "transformed" cell. This cell does not respond to normal controls over growth, and its descendants may multiply and grow to produce a tumor.

Cap: A layer of clay or other highly impermeable material installed over the top of a closed landfill to prevent entry of rainwater and minimize production of leachate.

Capacity Excess or Shortfall: The needs assessment compared to existing capacity.

Carcinogen: Substance or agent which causes higher than normal production of abnormal cells; i.e., cancer.

Catalyst: A substance, usually present in small amounts relative to the reactants, that increases the rate of a chemical reaction without being consumed in the process.

Caustics (Bases, alkalis): A large class of substances which form solutions have a high pH. Stronger caustics are corrosive to many materials. Caustics react with acids to form salts.

Cell: A portion of compacted wastes in a landfill that is enclosed by natural soil or cover materials.

Cement Kiln Incineration: Organic wastes are burned as a supplementary fuel at very high temperatures during the production of cement.

"Characteristics" of Hazardous Wastes: A method of identifying which substances are hazardous waste, by their physical/chemical properties. EPA has established four "characteristics" that can be determined by tests:

- *Ignitability - The ability to catch fire.

- *Corrosivity - The ability to wear away or destroy other materials, including human tissue.

- *Reactivity - The ability to enter into a violent chemical reaction, which may involve explosion or fumes.

- *EP (Extraction Procedure) Toxicity - The ability to release certain toxic constituents when leached with a mild acid.

Chemical Oxidation: Adding strongly oxidizing chemicals to a waste stream to effect a reaction which produces less toxic substances and may reduce quantities of such substances. (Cyanide can be detoxified by reaction with hypochlorite or some other oxidizing agent.)

Chemical Reduction: The addition of chemicals to wastes which cause partial or complete decomposition of particular waste components into their basic non-toxic parts.

Chemical Treatment: Treatment processes which alter the chemical structure of hazardous waste constituents to produce an innocuous or less hazardous material. Principle techniques include neutralization, precipitation, ion exchange, chemical dechlorination, and chemical oxidation/reduction.

Chlorinated Hydrocarbons: A class of persistent, broad-spectrum insecticides, notably DDT, that linger in the environment and accumulate in the food chain. Other examples are aldrin, dieldrin, heptachlor, chlordane, lindane, endrin, mirex, benzene, hexachloride, and toxaphene.

Chronic Health Effects: Long-term effects or those that are revealed after the elapse of some time, such as cancer, from a one-time or a repeated exposure to a substance.

Class I Land Disposal Facilities: Land disposal facilities which conform to requirements of regulations of the State Water Resources Control Board for Class I units, and which shall be located where natural geologic features provide optimum conditions for isolation of wastes from the waters of the State. Currently, these facilities may accept solid and dry hazardous waste. After 1990, they will be precluded from accepting any untreated hazardous wastes. They may not be located in areas subject to flooding by 100 year floods, areas subject to rapid geologic changes, or areas subject to tsunamis, seiches and surges, or within 200 feet of a fault zone active within the period defined.

Class II Land Disposal Facilities: Land disposal facilities which must be located where site characteristics and containment structures isolate wastes from the waters of the State. They may be located within areas subject to flooding, areas subject to rapid geologic change and areas subject to tsunamis, seiches and surges, if they are designed, constructed and maintained to preclude failure in protecting the waters of the State. Class II land disposal facilities are suitable for wastes which have been granted a variance from hazardous waste management requirements pursuant to Section 66310, Title 22, CAC. (See definition of Designated Waste.)

Closure: Actions taken by the owner or operator of a hazardous waste facility to prepare the site for long-term care and to make it suitable for other uses after it has stopped accepting waste.

COG: The literal meaning of this abbreviation is Council of Governments and AB 2948 references four specific COGs to receive funding for regional Plan development. This is not meant to preclude the use of other legally binding agreements between counties and cities which are regional in nature as a framework for the development of a regional or multi-county Plan. Associations of Governments, Joint Powers Agreements and the like may be the mechanisms through which multi-jurisdictional Plans are developed which will have the same validity as those COG Plans specifically funded in AB 2948 if the Plans are developed with the processes and procedures described in these Guidelines.

Compensation: Payments awarded through the courts or a government administered fund to cover injury or damage caused by exposure to hazardous substances. In the case of hazardous materials, awards usually cover lost income, out-of-pocket medical expenses, and pain and suffering.

Composting: A controlled process of organic breakdown of matter. In mechanical composting the materials are constantly mixed and aerated by a machine. The ventilated cell method mixes and aerates materials by dropping them through a vertical series of aerated chambers. Using windrows, compost is placed in piles out in the open air and mixed or turned periodically.

Conditional Use Permit (CUP): A discretionary permit, issued by cities and counties, which is required for certain projects that are allowable by special permit only. A conditional use permit imposes conditions on a project which are designed to assure that the project is compatible with the local general plan and zoning ordinances and that adverse impacts to neighboring land uses are minimized.

Confined Aquifer: An aquifer bounded above and below by impermeable beds or by beds of distinctly lower permeability than that of the aquifer itself; an aquifer containing confined groundwater.

Corrosive: The quality of a waste which causes the gradual deterioration of another substance by chemical processes, such as oxidation or attack by acids. A substance is considered corrosive if it has a pH greater than or equal to twelve or less than or equal to two.

County: ". . . a county that notifies the department that it will prepare a county hazardous waste management plan in accordance with this article and receives a grant pursuant to Section 25135.8. "County" also means any city, or two or more cities within a county acting jointly, which notifies the department that it will prepare a county hazardous waste management. . ." [AB 2948, Section 25135.1(a)]

County Hazardous Waste Management Plan (CHWMP or Plan): A hazardous waste management Plan pursuant to AB 2948 (1986, Tanner). This bill authorizes "... a county, in lieu of preparing the hazardous waste portion of the solid waste management plan, to adopt, by September 30, 1988, a county hazardous waste management plan pursuant to guidelines adopted by the department. . ." The bill also authorizes four designated COGs to prepare regional Plans.

County Solid Waste Management Plan (COSWMP): A plan which sets forth a comprehensive program for solid waste management pursuant to California Government Code Section 66780.

Countywide: The area of a county, including the cities and other entities (such as Indian, federal or state lands) within the boundaries of the county.

Cradle-to-Grave: The tracking of the source, quantity, concentration and type of hazardous waste from generation through final disposal.

Criteria Pollutant: An air pollutant for which there is considered to be a safe level of exposure and for which standards have been set. Current criteria pollutants are sulfur oxides, particulate matter, carbon monoxide, nitric oxides, ozone, and lead.

Dechlorination: Removal or neutralization of toxic concentrations of chlorine from a substances.

Deep Well Injection: Disposal of wastes by injecting them into a geological formation deep in the ground, sometimes after pretreatment to avoid solidification.

Department: The California State Department of Health Services.

Dermal Toxicity: The ability of a pesticide or toxic chemical to poison people or animals by touching the skin.

Designated Waste: Hazardous waste which has been granted a variance from hazardous waste management requirements pursuant to Section 66310, Title 22, CAC. A variance may be granted if the waste is insignificant as a potential hazard to human health and safety, livestock or wildlife because of its small quantity, low concentration or physical or chemical characteristics. Designated wastes must be handled, stored or disposed in a manner which will not result in hazard to human health and safety, livestock or wildlife.

Detoxification: Removal or destruction of a poison or a poisonous effect.

Developer: A person, government unit, or company that proposes to build a hazardous waste treatment, storage, or disposal facility.

Dilution: To thin down or weaken by mixing with another substance of substances, e.g., to dilute with water.

Discretionary Project or Permit: A project or permit which requires the use of judgement or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, or regulations.

Disposal: Abandoning, depositing, interring, or otherwise discarding waste as a final action after use has been achieved or a use is no longer intended. (Section 66048, Title 22, California Administrative Code; the Department of Health Services is proposing to revise this definition.)

Disposal Site: The location where any final deposition of hazardous waste occurs.

Dissolution: To dissolve in water or organic solvent.

Distillation: A process for separating liquids with different boiling points by heating the mixture to vapor and retrieving certain components, by reconsideration. (An important application is solvent recovery.)

Drum Decantation: To pour only the liquid material from a drum, leaving settled solids in the drum.

Effluent: Waste material discharged into the environment, it can be treated or untreated. Generally refers to water pollution.

Electrostatic Precipitators: Devices that remove particles from a gas stream by passing the gas through an electric field to charge the particles. The particles stick to the oppositely charged plate and are removed mechanically.

Eminent Domain: The right of a government to appropriate private property for necessary public use, with compensation paid to the landowner.

Environmental Impact Report (EIR): A detailed statement prepared pursuant to the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) describing and analyzing the significant environmental effects of a project and discussing ways to mitigate or avoid the adverse effects. The term "EIR" may mean either a draft or a final EIR, depending on the context. (Section 15362, CEQA Guidelines.)

Environmental Protection Agency, United States (EPA): Federal agency created by the Executive Reorganization Plan No. 3 in 1970 to consolidate federal regulatory authority over pollution. The agency is given the power to administer programs which address the environmental problems of water and air pollution, pesticides, toxic substances, radiation, noise and solid waste management.

Epidemiology: The study of prevalent diseases in humans.

Evaporation: A process for concentrating non-volatile solids in solution by vaporizing the liquid portion, usually water. Solar evaporation utilizes uncovered ponds.

Exempt Waste: Wastes exempt from the permitting process and from reporting requirements, such as wastes which are recycled on-site and some waste which are treated prior to discharge to sewers.

Exposure: Contact with a hazardous material, commonly by skin contact, breathing of substances or taking materials by mouth.

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA): The federal law regulating the manufacture, use and disposal of economic poisons (pesticides) for agricultural, forestry, household and other activities. It requires registration of all pesticides, classifies pesticides for general vs. restricted use, provides for suspension or cancellation of registrations for imminent hazard or unreasonable adverse effects on the environment, and requires informative and accurate labeling.

Filtration: Separating liquids and solids by passing suspensions through various types of porous materials.

Fixation: A process whereby waste is made unchangeable and/or stationary.

Flammable: Materials which will burn below 140° F, either spontaneously or through handling as a result of coming in contact with already flaming material.

Fluidized-Bed Incineration: Wastes are injected into agitated beds of inert granular material and burned. Suitable for sludges and liquid wastes; solid waste may need grinding.

General Areas: Areas within the planning area which can be identified by specific boundaries.

Generator: The person or facility who, by nature or ownership, management, or control, is responsible for causing or allowing to be caused, the creation of hazardous waste.

Geology: (1) The composition and structure of the earth's crust; (2) The study of the earth's crust.

Groundwater: Water below the land surface in a zone of saturation. (22 CAC Section 66079)

Groundwater Plume: A body of contaminated groundwater, originating from a specific source and influenced by such factors as the local groundwater flow pattern, density and concentration of contaminant, and character of the aquifer.

Halogenated: Substances having a chlorine, bromine, fluorine, or iodine atom in their structure.

Hauler: A transporter.

Hazardous Material: A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: (1) Cause, or significant contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed. Unless expressly provided otherwise, the term "hazardous material" shall be understood to also include extremely hazardous material. (22 CAC, Section 66084)

Hazardous Substance: This term means:

- (a) Any substance designated pursuant to Section 1321 (b) (2) (A) of Title 33 of the United States Code.
- (b) Any element, compound, mixture, solution, or substance designated pursuant to Section 102 of the federal act (42 U.S.C. 9602).
- (c) Any hazardous waste having the characteristics identified under or listed pursuant to Section 6921 of Title 42 of the United States Code, but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by act of Congress.
- (d) Any toxic pollutant listed under Section 1317 (a) of Title 33 of the United States Code.
- (e) Any hazardous air pollutant listed under Section 7412 of Title 42 of the United States Code.
- (f) Any eminently hazardous chemical substance or mixture with respect to which the Administrator of the United States Environmental Protection Agency has taken action pursuant to Section 2606 of Title 15 of the United States Code.
- (g) Any hazardous waste or extremely hazardous waste as defined by Sections 25117 and 25115, respectively, unless expressly excluded. (Health and Safety Code Section 25316)

Hazardous Substances Account: A state fund derived from fees paid by persons who submit more than 500 pounds per year of hazardous or extremely hazardous waste to on- or off-site hazardous waste disposal facilities. This is the primary funding source for the state Superfund program.

Hazardous Waste: A waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may either:

- (a) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.
- (b) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

Unless expressly provided otherwise, the term "hazardous waste" shall be understood to also include extremely hazardous waste. (Section 25117, Health and Safety Code.)

Hazardous Waste Control Account: An on-going state fund, derived from fees paid by operators or on- or off-site hazardous waste disposal facilities, which is the basic funding source for the Department of Health Services' hazardous waste management program.

Hazardous Waste Control Act: A California law, enacted in 1972, which was the first comprehensive hazardous waste control law in the United States. It established the state's hazardous waste management program within the Department of Health Services.

Hazardous Waste Element: That portion of a County Solid Waste Management Plan which addresses hazardous waste management.

Hazardous Waste Facility: All contiguous land and structures, other appurtenances, and improvements on the land, used for handling, treating, storing or disposing of hazardous wastes. (22 CAC Section 66096)

Hazardous Waste Facility Permit: A document issued by the Department to implement the requirements of Chapter 6.5 of Division 4, of the Health and Safety Code. (22 CAC Section 66096)

Hazardous Waste Management: The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery and disposal of hazardous waste. (22 CAC Section 66130)

Heavy Metals: Certain metallic elements having a high density and are generally toxic; for example, lead, silver, mercury and arsenic.

Herbicide: A chemical used to kill plants. (A class of pesticide.)

High Priority Wastes: Wastes which have properties particularly hazardous to human health (toxicity), which can accumulate in living organisms (bioaccumulation), and which remain hazardous for a long time (persistence); or which pose increased potential for air emissions due to their volatility, and ground water contamination, due to seepage through soil (mobility). Examples include wastes which contain pesticides, PCBs, cyanides, toxic metals, halogenated organics, or nonhalogenated volatile organics.

HSWA: The Hazardous and Solid Waste Amendments of 1984 (federal).

Hydrocarbons: Compounds found in fossil fuels, that contain carbon and hydrogen and may be carcinogenic.

Hydrogeology: The geology of groundwater, with particular emphasis on the chemical composition and movement of the water.

Impermeability: As applied to soil or subsoil, the degree to which fluids, particularly water, cannot penetrate in measurable quantities.

Incentives: (1) Measures which provide benefits to communities above and beyond the costs associated with hazardous waste management facilities. Incentives would make a community better off than it was before a hazardous

waste management facility is sited; (2) also refers to certain measures (such as low interest loans, tax breaks, etc.) taken by government to stimulate the development and implementation of improved technologies for managing hazardous waste.

Incineration: A process for reducing the volume or toxicity of hazardous wastes by oxidation at high temperatures.

Incinerator: An enclosed device using controlled flame combustion the primary purpose of which is to thermally break down hazardous waste. Examples are a rotary kiln, fluidized bed and liquid injection.

Incompatible Waste: A hazardous waste that is unsuitable for:

- a) placement in a particular device or facility because it may cause corrosion or decay of contaminated materials (e.g., container inner liners or tank walls), or
- b) commingling with another waste or material under uncontrolled conditions that might produce heat or pressure, fire and explosion, violent reaction, toxic dusts or flammable fumes or gases.

Inert: Exhibiting no chemical activity; totally unreactive.

Infectious Waste: Waste that contains pathogens. Consisting of tissues, organs, body parts, blood, and body fluids that are removed during surgery.

Injunction: A court order to refrain from doing a particular activity.

Inorganic Materials: Compounds that are not carbon or their derivatives.

Interim Authorization: The conditional permission from the U.S. EPA which enables a state to operate its own hazardous waste management program.

Interim Status: A period of time during which hazardous waste treatment, storage and disposal facilities can continue to operate under a special set of regulations until the appropriate permit or license application is approved by the Department of Health Services.

Ion Exchange Irritant: Substances that are not corrosive, but can injure or inflame living tissue.

Ions: Chemical constituents of a solution having a positive or negative electrical charge.

Joint Powers Agreement (JPA): An agreement between two or more public agencies for the joint exercise of any power common to the contracting parties.

Judicial Review: Refers to legal evaluations made by the courts concerning administrative agency decisions and actions.

Lagoon: A shallow, usually artificial pond where sunlight, bacterial action, and oxygen interact to restore waste water to a reasonable state of purity. Any pond used for the temporary or permanent storage of liquid.

Land Disposal Method: Disposal, storage or treatment of hazardous wastes on or into the land, including, but not limited to, landfill, surface impoundment, waste piles, deep-well injection, land spreading, and co-burial with municipal garbage.

Land Disposal Restrictions: Refers to the state and federal program to progressively ban the land disposal of untreated hazardous wastes.

Landfarming (Land Application, Land Spreading): A treatment technique which involves spreading the waste on land and utilizing evaporation and microbial action to degrade the wastes. (Not the same as landfilling.) Used primarily for crude oil wastes.

Landfill Gas: Gas generated by the natural anaerobic decomposition of municipal solid waste in sanitary landfills. It consists of about 60 percent methane and 40 percent carbon dioxide.

LC50: Median lethal concentration which is the statistical estimate of the concentration of a substance in air or water necessary to kill 50% of test organisms within a specified time under standardized conditions.

LD50: Median lethal dose which is the statistical estimate of the dosage of substance necessary to kill 50% of an infinite population of test animals as determined from exposure to the substance, by any route other than inhalation, within a specified time under standardized conditions.

Leachate: The liquid that leaks out of a landfill. Leachate frequently contains contaminants dissolved from the waste in the landfill.

Leachate Collection System: A system that gathers leachate and pumps it to the surface for treatment.

Lead Agency: The public agency which has the principle responsibility for carrying out or approving a project. The lead agency will decide whether or not an EIR or Negative Declaration will be required for the project and will cause the document to be prepared.

Liner: A relatively impermeable barrier designed to prevent leachate from leaking from a landfill. Liner materials include plastic sheets and dense clay.

Listed Waste: Wastes "listed" by EPA as hazardous by definition, even in instances where the "characteristics" may not apply.

Local Assessment Committee: Review group created by a host or abutting community to analyze a proposed hazardous waste management facility. In some states such Committees have the authority to negotiate with the facility proponent (on behalf of the community) regarding the conditions under which the hazardous waste management facility may be built.

Local Veto Authority: Within the context of hazardous waste management facility siting, refers to the ability of cities and counties to unilaterally reject proposed facilities by denying local land-use approval.

Management: The systematic control of the storage, transportation, processing treatment, collection, source separation, recovery and disposal of hazardous

wastes. It includes administrative, financial, legal, and planning activities as well as operational aspects of hazardous waste handling, disposal, and resource recovery systems.

Manifest: A State form which indicates generator, quantity, type of waste, and disposer of waste for each shipment of hazardous wastes handled in off-site facilities.

Mediation: A voluntary negotiation process in which a neutral mediator assists the parties in a dispute to reach a mutual agreement.

Memorandum of Agreement (MOU): A written record between administrative agencies which clarifies or establishes joint procedures or authorities necessary to administer a program.

Microorganism: In the context of biological treatment of wastes, microscopic bacteria, protozoa, fungi, and other living matter which degrade organic wastes.

Midnight Dumper: An expression used to refer to a person or company which disposes of hazardous waste in an illegal manner.

Mining Overburden: Material overlying an economic mineral deposit which is removed to gain access to that deposit.

Ministerial Project or Permit: Involves governmental decision involving little or no personal judgement by the public official as to the wisdom or manner of carrying out the project. The public official merely applies the law to the facts as presented, but uses no special discretion or judgement in reaching a decision. A ministerial decision involves only the use of fixed standards or objective measurements, and the public official cannot use personal, subjective judgement in deciding whether or how the project should be carried out. Common examples of ministerial permits include automobile registration, dog licenses, and marriage licenses.

Mitigation: Includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- (d) Compensating for the impact by replacing or providing substitute resources or environments.

Monitoring Well: A well, drilled near a hazardous waste management facility, to allow ground water to be sampled and analyzed for contamination.

Multi-County: An area including two or more counties.

Mutagenic: Causing alterations in the structure of genetic material of living things.

National Pollutant Discharge Elimination System (NPDES): The national program established under the Federal Water Pollution Control Act, which requires all point source discharges into any body of water to be permitted by EPA or the designated state agency. Minimum pretreatment requirements for such discharges are established under the program.

Need for Facility: A present or projected shortfall of facilities to meet local or multi-county waste management purposes, including facilities which provide more desirable or economic means of hazardous waste management and may serve greater than local needs.

Needs Assessment: The determination of the total required capacity (treatment or disposal, depending on context). The needs assessment ignores existing capacity.

Negative Declaration: A written statement by the lead agency and subject to formal public review which briefly describes the reasons why a proposed project, not exempt from CEQA, will not have a significant effect on the environment and, therefore, does not require the preparation of an EIR. (Section 15371, CEQA Guidelines).

Negotiation: A process through which tradeoffs are made by parties in a dispute to reach an agreement satisfying them all.

Neutralization: A treatment technology whereby acids and alkalis are reacted to or salts and water with a pH approaching neutral.

New Source: Within the context of air pollution control, this refers to a new facility or a modification of an existing facility which is a source of air pollution. (May cause restrictions on the development of some hazardous waste facilities.)

Nonattainment Area: Area whose ambient air levels of pollutants exceeds federal or state standards. (May be difficult to approve certain kinds of hazardous waste facilities, such as incinerators, in nonattainment areas.)

Nonhalogenated: Substances which do not contain halogens (chlorine, bromine, fluorine or iodine) and evaporate at relatively low temperatures.

Offset: Emissions reductions required to be made at another facility or on other equipment of the same owner in order to mitigate the increased emissions caused by a new source (hazardous waste facility). The offset is intended to maintain or improve the quality of the air.

Off-Site Hazardous Waste Facility: A hazardous waste facility that is not an on-site facility. (Health and Safety Code Section 25117.11)

On-Site Hazardous Waste Facility: A hazardous waste facility at which a hazardous waste is produced and which is owned by, leased to, under the control of, the producer of the waste. (Health and Safety Code Section 25117.12)

Operator: A person, government unit, or company that conducts treatment, storage or disposal. The operator may or may not be the developer.

Organic: Chemical substances of animal or vegetable origin, of basically carbon structure, including hydrocarbons and their derivatives.

Organometallic Compounds: Organic molecules (ingredients) which incorporate metal atom(s) into their molecular structure.

PCB: Polychlorinated biphenyl -- any of a group of chlorinated compounds used in industrial processes in the form of colorless, odorless, viscous liquid, and discharged in industrial wastes.

Percolation: Downward flow or filtering of water through pores or spaces in rock or soil.

Permit: A document issued by a governmental unit that allows specified activities to proceed under specified conditions.

Permit Streamlining Act (A.B. 884): A California act, enacted in 1977, which imposes timeframes and requirements on governmental agencies permitting processes for development project.

Permit to Operate: An authorization, issued by Air Pollution Control Districts and Air Quality Management Districts, which is required before operation of a facility and is contingent upon a demonstration that the facility can comply with applicable rules and regulations and with conditions imposed in the Authority to Construct.

Pesticide: A chemical used to kill destructive insects or other small animals, such as fleas and lice.

pH: A measure of the acidity or alkalinity of a liquid. The scale indicates neutrality at 7; acidity is indicated by numbers below 7, down to zero. Alkalinity is indicated by numbers above 7, up to 14.

Physical Treatment: Treatment processes which separate components of a waste stream or change the physical form of the waste without altering the chemical structure of the constituent materials.

Pickling Liquors: Corrosive liquids used for removing scale and oxides from metals.

Ponding: The tendency of land to hold water in ponds, encouraging water to pass downward through the soil.

Post-Closure: The time period following the closure (shutdown) of a facility.

Precipitation: The changing of a substance held in solution by adding a chemical to cause change into a solid form, thus allowing the solids to be gathered and removed from the liquids.

Prevention: Measures taken to minimize the release of wastes to the environment.

Process Substitution: Substituting one industrial or production process for another, usually in order to reduce the amount of toxic or unwanted material used or produced.

Publicly Owned Treatment Works (POTW): A municipal wastewater treatment facility.

Pyrolysis: Heating toxic materials in an enclosed space, in an oxygen deficient condition, resulting in a residual material of lowered toxicity.

Recharge Zone: A land area where water, from precipitation, infiltration from surface streams or impoundment areas or other sources soaks into the ground and enters an aquifer.

Recycle: To redirect or utilize a hazardous waste or a substance from a hazardous waste, and includes recovery of resources from a hazardous waste. (Health and Safety Code Section 25121)

Refractory Organics: Organic compounds which are resistant to decomposition through burning or high temperature treatment.

Refuse-Derived Fuel (RDF): The combustible, or organic, fraction of municipal, solid waste which has been prepared for use as a fuel by any of several mechanical processing methods.

Regional Facility: A hazardous waste management facility which accepts wastes from more than one county.

Regional Plan: A Plan prepared by one of the COGs designated in AB 2948 or by joint agreement between two or more counties under a legally constituted agency covering the planning area, which has the delegated authority to prepare a Regional Plan.

Regional Water Quality Control Boards (RWQCBs): Each of the nine regional boards formulate and adopt water quality control plans for their respective regions and regulate waste discharges from point and non-point sources by establishing and enforcing waste discharge requirements.

Registered Hazardous Waste Transporter: A transporter registered with the State Department of Health Services to transport hazardous wastes.

Research, Development and Demonstration Units (RD&Ds): Either, (1) Department designated facilities located on-site, at the source of generation which are exempt from the CHWMP consistency requirement; or (2) Department designated facilities located in industrial zones or in other zones, where, because of their temporary and experimental nature, they are granted a limited life conditional use permit by local government. Since they must be operated under the conditions of the local land use permit, such facilities are consistent with the CHWMP.

Residuals: Materials remaining after waste treatment and/or reduction processes have taken place. Residuals may be less hazardous, less voluminous, or more easily contained than the original hazardous waste.

Residuals Repository: A storage facility which accepts solid materials resulting from the treatment of hazardous wastes to standards established by the Department or hazardous organic waste which is stabilized, solidified or encapsulated. No free liquids will be accepted. The residuals are solids, with relatively insoluble toxic material content and are to be kept dry by the design of the facility. Potentially, wastes could be kept segregated to allow eventual reclamation.

Resolution: Any legally binding method of taking action by a Board of Supervisors, City Council or other governing boards of regional agencies, such as COGs, special districts, and self designated multi-county or single county agencies, to develop and adopt the CHWMP or to delineate voting processes meeting the requirements of AB 2948.

Resource Conservation and Recovery Act (RCRA): A federal act which gives the Environmental Protection Agency the authority to develop a nationwide program to regulate hazardous wastes from "cradle-to-grave". Enacted in 1976, the Act was established to "protect human health and the environment from the improper handling of solid waste and encourage resource conservation".

Resource Recovery: The reuse or reclamation of any hazardous waste or any recyclable hazardous material (except those that are exempted by Section 25127.5 of the Health and Safety Code). (22 CAC Section 66180)

Responsible Agency: A public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purpose of CEQA, the term "responsible agency" includes all public agencies other than the lead agency which have discretionary approval power over the project. (Section 15381, CEQA Guidelines)

Risk: A measure of the likelihood and the severity of injury.

Risk Assessment: Evaluation of the threat to public health and the environment posed by a hazardous waste facility, or other source, considering probability of incident and its effects.

Rodenticide: A class of pesticide which kills, repels or controls rodents (rats, mice, rabbits, squirrels, gophers).

Rotary Kiln Incineration: Liquid or solid wastes are burned in large inclined cylinders lined with fire-brick and rotated to improve movement of solids through the incinerator. Virtually any type of waste in any form can be incinerated.

SARA: Superfund Amendments and Reauthorization Act of 1986 (federal).

SDWA: Safe Drinking Water Act (federal).

Sensitizers: Substances which produce allergic reactions.

SIC Number: A number assigned to a corresponding type of industry, manufacture, or product under the Standard Industrial Code prepared by the U.S. Office of Management and Budget.

Siting Criteria: Factors which must be met to determine the physically appropriate site or area for the location of a hazardous waste management facility. These factors do not include justification of need for a facility.

Sludge: Waste materials in the form of a concentrated suspension of waste solids. One type of sludge is produced from the treatment of sewage.

Solid Waste: All solid and semisolid wastes, such as garbage, rubbish, paper, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure,

vegetable or animal solids and semisolid wastes, and other discharged solid and semisolid wastes; also liquid wastes disposed of in conjunction with solid wastes at solid waste transfer/processing stations or disposal sites, but excluding (a) sewage collected and treated in a municipal or regional sewerage system; or (b) material or substances having commercial value, which have been salvaged for reuse, recycling, or resale.

Solidification: A treatment process for limiting the solubility of or detoxifying hazardous wastes by producing blocks of treated waste with high structural integrity.

Solvent: A substance used for dissolving another substance.

Solvent Extraction: Treating a solid or liquid waste to extract hazardous so that with the bulk of the waste stream may be discarded as non-hazardous.

Source Reduction: On-site practices which reduce, avoid or eliminate the generation of hazardous waste.

Special Wastes: A waste which is a hazardous waste only because it contains an inorganic substance or substances which cause it to pose a chronic toxicity hazard to human health or the environment and which meets all of the criteria and requirements of Section 66742 and which has been classified a Special Waste pursuant to Section 66744. (22 CAC Section 66191) Examples: Ash from burning of fossil fuels, biomass and other combustible materials, auto shredder waste, baghouse and scrubber waste from air pollution control, catalyst from petroleum refining, cement kiln dust, dewatered sludge from treatment of industrial process water, dewatered tannery sludge, drilling mud from drilling of gas and oil wells, refractory from industrial furnaces, kilns and ovens, sand from sandblasting, sand from foundry casting, slag from coal gasification, sulfur dioxide scrubber waste from the fuel gas emission control in combustion of fossil fuels, tailings from the extraction, beneficiation and processing of ores and minerals.

Stabilization: A treatment process for limiting the solubility of or detoxifying hazardous wastes by addition materials which ensure that hazardous constituents are maintained in their least soluble and/or toxic form.

State Preemption Override: In the context of hazardous waste management facility siting, state preemption refers to the State preempting local decision-making authority over hazardous waste management facility siting such that no local decision is required to site such facilities.

State Water Resources Control Board (SWRCB): The State Board, established by the Porter-Cologne Water Quality Control Act of 1967, adopts state policy for water quality control in accordance with legislative policies, is designated as the state water pollution control agency for the purposes of the Federal Water Pollution Control Act, and reviews actions of the Regional Water Quality Control Boards relative to regulation of waste discharges.

Storage Facility: A hazardous waste facility at which hazardous waste is contained for period greater than 96 hours at an off-site facility or for periods greater than 90 days at an on-site facility. (Health and Safety Code Section 25123.3)

Suggested Control Measures: Control strategies necessary to attain federal and state ambient air quality standards.

Sump: A stationary device designed to contain an accumulation of hazardous waste resulting from a hazardous discharge from a tank, container, waste pile, surface impoundment, landfill, or other hazardous waste management structure.

Superfund: Refers to the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the California Hazardous Substance Bond Act of 1984 (Article 7.5 of Division 20 of the California Health and Safety Code). These provide funding for emergency or remedial action to clean up sites contaminated with hazardous waste.

Surface Impoundment: A hazardous waste facility or part of a facility which is a natural topographic depression, man-made excavation, or dikes area which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, usually in order to treat the wastes.

Synergistic: The action of two materials together which is greater in effect than the sum of their individual actions.

Thermal Treatment: Hazardous waste is put into a device which uses elevated temperatures as the primary means to change the chemical, physical, or biological character of the waste. (The most common type of thermal treatment is incineration.)

Toxic: Capable of producing injury, illness, or damage to humans, domestic livestock or wildlife through ingestion, inhalation, or absorption through any body surface.

Toxic Air Contaminant: An air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Toxicology: The science of toxics, their effects, antidotes, etc.

Transfer Station: Any hazardous waste facility where hazardous wastes are loaded, unloaded, pumped or packaged. (22 CAC Section 66212)

Transportable Treatment Units (TTUs): Hazardous waste treatment works which are designed to be moved either intact or in modules and which are intended to be operated at a given location for a limited period of time. TTU's are regulated as follows: (1) Where TTUs are treating wastes at the site of the waste generation, they shall be considered as on-site and therefore exempt from the consistency requirements of AB 2948; (2) Where TTUs are treating wastes which have been removed from the generation site, such as at a transfer station, they will be situated on property which is already permitted for hazardous waste management by the state and local government. They shall be given consistency status with CHWMPs; and (3) TTUs used at cleanup sites, either for site mitigation or for emergency response purposes shall be considered to be on-site units.

Transportation: The movement of hazardous waste by air, rail, highway or water. (22 CAC Section 66213.5)

Transportation Route: Any major freeway or interstate highway designated under AB 1861 (Campbell, 1985) which is used to transport hazardous waste or materials.

Treated Hazardous Waste: The solid residual portion of a hazardous waste that is produced when the hazardous waste is treated by a method, technique, or process, including incineration, that changes the physical, chemical, or biological character or composition of the waste and that is in compliance with at least one of the following:

- a) It meets the criteria and requirements for, and may be managed as, a special waste.
- b) It does not contain any persistent or bioaccumulative toxic substance in excess of the soluble threshold limit concentration for the substance as established in regulations adopted by the Department.

Treatment: Any method, technique or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store or dispose of; or amenable for recovery, amenable for storage or reduce in volume. (22 CAC Section 66216)

Treatment Facility: Any facility at which hazardous waste is subjected to treatment or where a resource is recovered from a hazardous waste.

TRM: Technical Reference Manual, a multi-part document prepared by the Department which supports these Guidelines and provides data to persons preparing CHWMPs.

TSCA: Toxic Substances Control Act (federal).

TSDF: A treatment, storage or disposal facility. This may also include transfer stations. This term is used in definitions of federal regulations.

Variance: An exemption from the Department's permitting process which is granted under special, stated conditions. Notifications of variances are sent to the local environmental health and land use planning departments and such facilities are still subject to local land use permits.

Vinyl Chloride: A chemical compound used in producing some plastics. Excessive exposure to this substance may cause cancer.

Volatile: Any substance that evaporates at a low temperature.

Waste: Any waste for which no use or reuse is intended and which is to be discarded. For purposes of the CHWMP, waste is considered to be any material for which no use or reuse can be found at the primary generation site which must be managed in a process separate from the generation process.

Waste Discharge Requirements: An authorization issued by the Regional Water Quality Control Boards which sets requirements for the discharge of wastes from point sources.

Waste Exchange: Clearinghouse approach to transferring treated and untreated hazardous wastes to an industrial user for uses as raw material. (One method of waste reduction.)

Waste Reduction: On-site practices which reduce, avoid or eliminate the need for off-site hazardous waste facilities, including source reduction, recycling and treatment.

Waste Stabilization Ponds: Holding ponds used to stabilize the composition of wastes.

Wastestream: All waste coming into, through, or out of a facility; sometimes used to refer to all waste, collectively.

WTE: Waste to Energy Plant.

APPENDIX B

DEPARTMENT OF HEALTH SERVICES

SUGGESTED TABLES

QUANTITIES OF HAZARDOUS WASTE SHIPPED OFFSITE IN CURRENT YEAR
BY GENERATORS IN THE COUNTY (Suggested Table A)

<u>Waste Group</u>	<u>Total Quantity of Manifested Waste Shipped Offsite (tons)</u>	<u>Generalized Treatment Method</u>
Waste oil	54.16	Oil recovery
Halogenated solvents	26.97	Sol. recovery
Non-halogenated solvents	247.68	Sol. recovery
Organic liquids	8.31	Recycling
Pesticides	109.79	Aqueous treatment organic
PCB's & dioxins	1.95	Incineration
Oily sludges	269.97	Oil recovery
Halogenated organic sludges & solids	---	Incineration
Non-halogenated organic sludges & solids	2144.48	Incineration
Dye & paint sludges & resins	8.10	Incineration
Metal-containing liquids	333.68	Aqueous treat-metal/ neutralization
Cyanide & metal liquids	0	Aqueous treat-metal/ neutralization
Non-metallic inorganic liquids	73.27	Aqueous treat-metal/ neutralization
Metal-containing sludges	1.47	Stabilization
Non-metallic inorganic sludges	0	Stabilization
Contaminated soil	756.54	Incineration

QUANTITIES OF HAZARDOUS WASTE SHIPPED OFFSITE IN CURRENT YEAR
BY GENERATORS IN THE COUNTY (Suggested Table A)
(Continued)

<u>Waste Group</u>	<u>Total Quantity of Manifested Waste Shipped Offsite (tons)</u>	<u>Generalized Treatment Method</u>
Miscellaneous wastes		
Asbestos-containing waste	5.10	Stabilization
Other inorganic solid waste	17.50	Other recycling
Off-spec aged or surplus organics	0.45	Other recycling
Other empty containers >30 gallons	2.17	Other recycling
Empty containers <30 gallons	3.37	Other recycling
Laboratory waste chemicals	0.63	Other recycling
TOTAL	4,065.59	

CURRENT COUNTY NEEDS ASSESSMENT FOR COMMERCIAL HAZARDOUS
WASTE TREATMENT/DISPOSAL CAPACITY, (Suggested Table B)

<u>Generalized Treatment Method</u>	<u>Required Treatment Capacity (tons/yr)</u>
Aqueous treatment organic	109.79
Aqueous treatment metals/ neutralization	406.95
Incineration	2911.07
Solvent Recovery	274.65
Oil Recovery	324.13
Other Recycling	32.43
Stabilization	6.57

COMMERCIAL HAZARDOUS WASTE TREATMENT/DISPOSAL FACILITIES AND
THEIR CAPACITIES AND QUANTITIES OF WASTE TREATED OR
DISPOSED IN CURRENT YEAR (Suggested Table C)

<u>Generalized Treatment Method</u>	<u>Capacity</u>	<u>Quantity of Waste Treated or Disposed (tons)</u>	<u>% of Capacity Used</u>
Aqueous treatment- organic		114.76	
Aqueous treatment- metals/ neutralization		411.92	
Incineration		2911.07	
Solvent Recovery		274.65	
Oil Recovery		648.26	
Other Recycling		17.95	
Stabilization		11.11	
Residuals Disposal		0	

CURRENT COUNTY NEEDS ASSESSMENT FOR COMMERCIAL HAZARDOUS
WASTE TREATMENT/DISPOSAL CAPACITY, (Suggested Table D)

<u>Generalized Treatment Method</u>	<u>Required Treatment Capacity (tons/yr)</u>	<u>Existing Treatment Capacity</u>	<u>Capacity Excess (+) or Deficiency (-)</u>
Aqueous treatment- organic	114.76		
Aqueous treatment- metals/ neutralization	411.92		
Incineration	2911.07		
Solvent Recovery	274.65		
Oil Recovery	648.26		
Other Recycling	17.95	49	
Stabilization	11.11		
Residuals Disposal	0		

QUANTITIES OF HAZARDOUS WASTE IMPORTED INTO THE COUNTY
IN CURRENT YEAR (Table E)

<u>Waste Group</u>	<u>County of Generation</u>	<u>Quantity of Waste Received from County (tons)</u>	<u>Total Quantity Handled By Facility (tons)</u>
Waste Oil			
Halogenated solvents			
Non-halogenated solvents			
Organic liquids			
Pesticides			
PCB's & dioxins			
Oily sludges			
Halogenated organic sludges & solids			
Non-halogenated organic sludges & solids			
Dye & paint sludges & resins			
Metal-containing liquids			
Cyanide & metal liquids			
Non-metallic inorganic liquids			
Metal-containing sludges			
Non-metallic inorganic sludges			
Contaminated soil			
Miscellaneous wastes	Los Angeles	49	49

COMMERCIAL HAZARDOUS WASTE STORAGE CAPACITY
AND ACTIVITY IN CURRENT YEAR (Suggested Table G)
Facility Name Tulare Co Ag Comm.

<u>Storage Method</u>	<u>Average Monthly Quantity of Wastes in Storage for Over 90 Days (gallons)</u>	<u>Storage Capacity (gallons)</u>	<u>% of Storage Capacity Used</u>
S01 Container			
S02 Tank	50	1500	3.3
S03 Waste Pile			
S04 Surface Impoundment			
S05 Other			

ON-SITE TREATMENT/DISPOSAL OF HAZARDOUS WASTE
 IN CURRENT YEAR (Suggested Table H)
 Facility Name Western Farm Service

<u>Generalized Treatment Method</u>	<u>Quantity Treated/ Disposed On Site (tons)</u>	<u>Capacity of Treatment Method (tons)</u>	<u>% of Capacity Used</u>
Aqueous treatment- organic	49		
Aqueous treatment- metals/ neutralization			
Incineration			
Solvent Recovery			
Oil Recovery			
Other Recycling			
Stabilization			
Residuals Disposal			

ON-SITE TREATMENT/DISPOSAL OF HAZARDOUS WASTE
IN CURRENT YEAR (Suggested Table H)
Facility Name B.P. Performance Polymers

<u>Generalized Treatment Method</u>	<u>Quantity Treated/ Disposed On Site (tons)</u>	<u>Capacity of Treatment Method (tons)</u>	<u>% of Capacity Used</u>
Aqueous treatment- organic			
Aqueous treatment- metals/ neutralization	840		
Incineration			
Solvent Recovery			
Oil Recovery			
Other Recycling			
Stabilization			
Residuals Disposal			

QUANTITIES OF HAZARDOUS WASTE SHIPPED OFFSITE
BY GENERATORS IN TULARE COUNTY DURING 1986
(Suggested Table I)

Waste Group	Ttl Quantity of Manifested Wastes from County (tons)	Wastes From Site Clean-ups (tons)	Wastes Transfer Station (tons)	Column 1 Minus Columns 2 and 3 (tons)	Varied/Exempted/ Wastes (tons)	Wastes From Small Quantity Generators (tons)	Total (tons)	House- hold Wastes (tons)
Waste Oil	54.16			54.16			54.16	688
Halogenated Solvents	26.97	1.25		25.72		34.75 ¹	60.47	300
Non-halogenated solvents	247.68			247.68		34.75 ¹	282.43	
Organic liquids	8.31			8.31			8.31	
Pesticides	109.79	0.22		109.57			109.57	
PCB's & dioxins	1.95	1.95		0.00			0.00	
Oily sludges	269.97			269.97			269.97	
Halogenated organic sludges & solids	---			---				
Non-halogenated organic sludges & solids	2144.48	1659.82		484.66		18.0	2,162.48	
Dye & paint sludges & resins	8.10			8.10		6.0	14.10	435
Metal-containing liquids	333.68			333.68		499.05 ²	832.73	
Cyanide & metal liquids	---			---		1.4	1.4	
Non-metallic inorganic liquids	73.27			73.27		19.5	92.77	
Metal-containing sludges	1.47			1.47		12.95 ²	14.42	
Non-metallic inorganic sludges	---			---				
Contaminated soil	756.54	756.54		0.00				
Miscellaneous wastes	29.22	5.10		24.12		38.9	63.02	75

¹ SQG waste estimates combined halogenated and non-halogenated solvent waste groups. Quantities were divided into two equal portions for presentation in the table.

² Waste groups metals containing liquids and sludges were split equally into the metal-containing liquids and the metal-containing sludges groups.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
DURING 1986 IN TULARE COUNTY
(Suggested Table J)

<u>Waste Group</u>	<u>Industry SIC Codes</u>									
	07	27	29	34	82	2026	2700	2761	2821	3351
Waste Oil			29.19	0.47	1.87					
Halogenated Solvents							4.2			
Non-Halogenated Solvents							4.2			
Organic Liquids										
Pesticides	61.47									
PCB's & Dioxins										
Oily Sludges										269.79
Halogenated Organic Sludges & Solids										
Non-halogenated Organic Sludges & Solids				1.74		5.46		373		30.75
Dye & Paint Sludges & Resins		6.12								
Metal-Containing Liquids							1.96		840	
Cyanide & Metal Liquids							1.4			
Non-Metallic Inorganic Liquids							2.1			
Metal-Containing Sludges							0.35			
Non-Metallic Inorganic Sludges										
Contaminated Soil										
Miscellaneous Wastes							22.26 ^a			1.22

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
DURING 1986 IN TULARE COUNTY
(Suggested Table J)

Waste Group	Industry SIC Codes								
	3551	3569	3674	3679	3713	3955	4911	4924	5511
Waste Oil					1.59		1.83	1.29	
Halogenated Solvents		1.10	1.36		1.13				
Non-Halogenated Solvents		1.59	30.64		16.93	4.35	1.14		0.43
Organic Liquids							2.98		
Pesticides	40.44								
PCB's & Dioxins									
Oily Sludges	269.79	0.18							
Halogenated Organic Sludges & Solids									
Non-halogenated Organic Sludges & Solids	30.75		50.55	4.81			10.42	4.56	
Dye & Paint Sludges & Resins		1.59						0.39	
Metal-Containing Liquids			80.89	6.40					
Cyanide & Metal Liquids									
Non-Metallic Inorganic Liquids	0.05		3.89	29.30		40.03			
Metal-Containing Sludges			1.47						
Non-Metallic Inorganic Sludges									
Contaminated Soil									
Miscellaneous Wastes	1.22	0.45	1.24						

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
DURING 1986 IN TULARE COUNTY
(Suggested Table J)

<u>Waste Group</u>	<u>Industry SIC Codes</u>						
	5541	5812	5961	7535	5500	7216	7332
Waste Oil		17.92			3665.0		
Halogenated Solvents					30.21		0.36
Non-Halogenated Solvents				0.60	30.21		0.35
Organic Liquids	3.32	2.01					
Pesticides		0.16	7.50				
PCB's & Dioxins							
Oily Sludges							
Halogenated Organic Sludges & Solids							
Non-halogenated Organic Sludges & Solids	3.37					17.96	
Dye & Paint Sludges & Resins					5.7		0.28
Metal-Containing Liquids							6.84
Cyanide & Metal Liquids							
Non-Metallic Inorganic Liquids					17.1		0.28
Metal-Containing Sludges					5.7		6.84
Non-Metallic Inorganic Sludges							
Contaminated Soil							
Miscellaneous Wastes		1.83			501.6 ^a	.18	14.54 ^a

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
PROJECTED TO YEAR 2000
(Suggested Table K)

Waste Group	07	Industry SIC Codes								
		27	29	34	82	2026	2700	2761	2821	3351
Waste Oil			34.50	0.67	2.60		5.84			
Halogenated Solvents										
Non-Halogenated Solvents							5.84			
Organic Liquids										
Pesticides	69.60									
PCB's & Dioxins										
Oily Sludges									426.80	
Halogenated Organic Sludges & Solids										
Non-halogenated Organic Sludges & Solids				2.49		8.80		465.88		48.65
Dye & Paint Sludges & Resins		7.64								
Metal-Containing Liquids							2.72		992.88	
Cyanide & Metal Liquids							1.95			
Non-Metallic Inorganic Liquids							2.92			
Metal-Containing Sludges							0.49			
Non-Metallic Inorganic Sludges										
Contaminated Soil										
Miscellaneous Wastes	24.73						30.94 ^a			1.93

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
PROJECTED TO YEAR 2000
(Suggested Table K)

Waste Group	Industry SIC Codes									
	3551	3569	3674	3679	3713	3955	4911	4924	5500	
Waste Oil					2.41		2.54	2.31	5094.35	
Halogenated Solvents		1.87	2.06		1.71				41.99	
Non-Halogenated Solvents		2.70	41.19		25.65	6.59	1.58		41.99	
Organic Liquids							4.14			
Pesticides	68.71									
PCB's & Dioxins										
Oily Sludges		0.31								
Halogenated Organic Sludges & Solids										
Non-halogenated Organic Sludges & Solids			76.58	7.29			14.50	6.34		
Dye & Paint Sludges & Resins		2.70						0.54	7.9	
Metal-Containing Liquids			122.54	9.70						
Cyanide & Metal Liquids										
Non-Metallic Inorganic Liquids	0.08		5.9	44.39		60.64			23.77	
Metal-Containing Sludges			2.23						7.9	
Non-Metallic Inorganic Sludges										
Contaminated Soil										
Miscellaneous Wastes		0.76	1.88						697.2 ^a	

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

MAJOR INDUSTRY GROUPS OF WASTE GENERATED AND SHIPPED OFFSITE,
MANAGED ON-SITE AND SMALL QUANTITY GENERATORS
PROJECTED TO YEAR 2000
(Suggested Table K)

<u>Waste Group</u>	<u>Industry SIC Codes</u>						
	5511	5541	5812	5961	7216	7332	7535
Waste Oil			24.91				
Halogenated Solvents						0.50	
Non-Halogenated Solvents	0.59	4.62				0.50	0.84
Organic Liquids			2.79				
Pesticides			0.22	12.0			
PCB's & Dioxins							
Oily Sludges							
Halogenated Organic Sludges & Solids							
Non-halogenated Organic Sludges & Solids		4.68			24.96		
Dye & Paint Sludges & Resins						0.40	
Metal-Containing Liquids						9.51	
Cyanide & Metal Liquids							
Non-Metallic Inorganic Liquids						0.40	
Metal-Containing Sludges						9.51	
Non-Metallic Inorganic Sludges							
Contaminated Soil							
Miscellaneous Wastes			2.54		0.25	14.77 ^a	

a - Waste type quantities without conversions to waste groups were included in the miscellaneous waste group.

PROJECTED QUANTITIES OF CLEANUP WASTES
(Suggested Table L)

<u>Waste Group</u>	<u>Underground Tanks (tons)</u>	<u>Old Disposal Sites (tons)</u>	<u>Closed Toxic Pits (tons)</u>	<u>Other Cleanup Wastes (tons)</u>	<u>Total (tons)</u>
Waste Oil	0	0	0	0	0
Halogenated Solvents	0	0	0	0	0
Non-halogenated Solvents	0	0	0	0	0
Organic Liquids	0	0	0	0	0
Pesticides	0	0	0	41.5	41.5
PCB's and Dioxins	0	0	0	0	0
Oily Sludges	0	0	0	0	0
Halogenated Organic Sludges and Solids	0	0	0	0	0
Non-halogenated Organic Sludges and Solids	0	0	0	0	0
Dye and Paint Sludges and and Resins	0	0	0	0	0
Metal-containing Liquids	0	0	0	5.5	5.5
Cyanide and Metal Liquids	0	0	0	2.8	2.8
Non-metallic Inorganic Liquids	0	0	0	0	0
Metal-containing Sludges	0	0	0	2.8	2.8
Non-metallic Inorganic Sludges	0	0	0	0	0
Contaminated Soil	0	0	0	53	53
Miscellaneous Wastes	0	0	0	0	0
TOTAL	<u>0</u>	<u>0</u>	<u>0</u>	<u>106</u>	<u>106</u>

PROJECTED QUANTITIES OF NEW HAZARDOUS WASTE STREAMS
(Suggested Table M)

<u>Waste Group</u>	<u>Additional Pretreatment Sludges</u>	<u>Other New Wastes¹</u>
Waste Oil	0	0
Halogenated Solvents	0	Unknown
Non-halogenated Solvents	0	Unknown
Organic Liquids	0	0
Pesticides	0	0
PCB's and Dioxins	0	0
Oily Sludges	0	0
Halogenated Organic Sludges and Solids	0	Unknown
Non-halogenated Organic Sludges and Solids	0	Unknown
Dye and Paint Sluges and Resins	0	0
Metal-containing Liquids	0	0
Cyanide Metal Liquids	0	0
Non-metallic Inorganic Liquids	0	0
Metal-containing Sludges	0	0
Non-metallic Inorganic Sludges	0	0
Contaminated Soil	0	0
Miscellaneous Wastes	0	0
TOTAL	<u>0</u>	<u>0</u>

¹ Tulare County has identified a possible new waste stream from a potential furniture manufacturer, but waste quantities are not available.

TOTAL PROJECTED QUANTITIES OF HAZARDOUS WASTE GENERATION
(Suggested Table N)

<u>Waste Group</u>	<u>Projected Industrial Waste (Table K)</u>	<u>Projected Cleanup Wastes</u>	<u>Projected New Wastes</u>	<u>Projected Household Waste</u>	<u>Total</u>
Waste Oil	5164.34	0	0	977.5	6141.84
Halogenated Solvents	82.17	0	0	425	507.17
Non-halogenated Solvents	399.13	0	0	0	399.13
Organic Liquids	11.55	0	0	0	11.55
Pesticides	159.36	41.5	0	0	200.86
PCB's & Dioxins	0	0	0	0	0
Oily Sludges	427.11	0	0	0	427.11
Halogenated Organic Sludges & Solids	0	0	0	0	0
Non-halogenated Organic Sludges & Solids	660.23	0	0	0	660.23
Dye & Paint Sludges & Resins	19.22	0	0	616.24	635.46
Metal-containing Liquids	1820.18	5.5	0	0	1825.68
Cyanide & Metal Liquids	1.95	2.8	0	0	4.75
Non-metallic Inorganic Liquids	138.11		0	0	138.11
Metal-containing Sludges	20.23	2.8	0	0	23.03
Non-Metallic Inorganic Sludges	0	0	0	0	0
Contaminated Soil	0	53	0	0	53
Miscellaneous Wastes ¹	99.12	0	0	106.26	205.38
Total	<u>9003</u>	<u>106</u>	<u>0</u>	<u>2125</u>	<u>11234</u>

¹Wastes not identified into waste groups were put into miscellaneous waste group.

PROJECTED COMMERCIAL HAZARDOUS WASTE TREATMENT DISPOSAL
CAPACITY IN TULARE COUNTY (Suggested Table 0)

<u>Generalized Treatment Method</u>	<u>Capacity from Existing Facilities (tons)</u>	<u>Capacity from Proposed Facilities (tons)</u>	<u>Loss of Capacity from Closing Facilities (tons)</u>	<u>Total Projected County Capacity (tons)</u>
Aqueous Treatment - Organic	0	0	0	0
Aqueous Treatment - Metals/ Neutralization	0	0	0	0
Incineration	0	Unknown	0	Unknown
Solvent Recovery	0	0	0	0
Oil Recovery	0	0	0	0
Oil Recovery	0	0	0	0
Other Recycling	0	0	0	0
Stabilization	0	0	0	0
Residuals Disposal	0	0	0	0

PROJECTED COUNTY NEEDS ASSESSMENT FOR COMMERCIAL
HAZARDOUS WASTE TREATMENT FACILITIES
(Suggested Table P)

<u>Generalized Treatment Method</u>	<u>Projected County Capacity Requirement</u>	<u>Projected County Capacity</u>	<u>Projected Capacity Excess (+) or Deficiency (-)</u>
Aqueous Treatment - Organic ¹	235.77	0	-235.77
Aqueous Treatment - Metals/ Neutralization ¹	2003.45	0	-2003.45
Incineration	1348.69	Unknown	-1348.69
Solvent Recovery	906.3	0	-906.3
Oil Recovery	6568.95	0	-6568.95
Other Recycling ¹	79.32	0	-79.32
Stabilization ¹	90.8	0	-90.8

-
- 1 Treatment categories for miscellaneous wastes from small quantity generators and household wastes were divided into four generalized treatment methods as follows: 33 percent other recycling, 33 percent stabilization, 17 percent aqueous treatment-organic, and 17 percent aqueous treatment-metals/neutralization.

PROJECTED QUANTITIES OF RESIDUALS GENERATION
(Suggested Table Q)

<u>Generalized Treatment Method</u>	<u>Projected Capacity Requirement</u>	<u>Residue Generation Multiplier</u>	<u>Projected Quantity of Residuals</u>
Aqueous Treatment - Organic	235.77	.10	23.57
Aqueous Treatment - Metals/ Neutralization	2003.45	.50	1001.73
Incineration	1348.69	.10	134.87
Solvent Recovery	906.3	.20	181.26
Oil Recovery	6568.95	.20	1313.80
Other Recycling	79.32	---	---
Stabilization	90.8	1.20	108.96
		Total	<hr/> 2764.19

APPENDIX C

SUMMARY OF APPLICABLE STATE AND
FEDERAL LAWS

PART I

DESCRIPTION OF STATE POLICIES AND PROGRAMS CONCERNING THE MANAGEMENT OF HAZARDOUS WASTE

FEDERAL

I. FEDERAL WATER POLLUTION CONTROL ACT (FWPCA- "THE CLEAN WATER ACT)

This act eliminated the discharge of unregulated pollutants into navigable waters. Permission to discharge into navigable waters, as defined, occurs through a National Pollutant Discharge Elimination Permit (NPDES) from an authorized agency. In California, these permits are issued by the Regional Water Quality Control Boards.

II. SAFE DRINKING WATER ACT (SDWA)

This Act requires EPA to establish Maximum Contaminant Levels (MCL) for all contaminants which may have an adverse effect on the public health, where setting such levels is economically and technically feasible, and where it is not, to designate treatment techniques to reduce the level of contaminants to that which protects public

health. The Act regulates underground injection wells, which are given a permit by rule by the State.

III. RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

RCRA regulates the disposal of both non-hazardous and hazardous wastes. The hazardous waste regulatory program is tied together by the Uniform Hazardous Waste Manifest, which is prepared by the generator and follows the waste throughout the management system. The Act sets regulations to govern the transportation, storage and disposal of hazardous wastes and regulates underground tanks.

All RCRA regulatory programs have been delegated to the State of California and are implemented by the Department, with some regulatory implementation delegated to local governments.

IV. THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980. (CERCLA)

The Act ensures that victims of hazardous substances releases are compensated for their injuries, that environmental damages are corrected and that there is adequate emergency response to halt and cleanup unauthorized hazardous substances releases. The Act establishes the standard of strict liability, applied jointly and severally. The California Hazardous Substances Account Act, administered by the Department, is the State counterpart in cleanup activities.

V. TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA regulates the manufacture, distribution in commerce, processing, use or disposal of chemicals substances or mixtures which may present an unreasonable risk of injury or health to humans, as well as damage to the environment.

VI. THE OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 (OSHA)

OSHA was enacted to insure, as far as possible, safe and health working conditions for workers in the United States, by regulating working conditions and informing workers of the potential hazards of the chemicals to which they may be exposed in the working place. This Act is administered in California under the provisions of Cal OSHA.

VII. FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA)

FIFRA requires registration of pesticides and sets limits on use and application.

CALIFORNIA LAWS

I. CALIFORNIA HAZARDOUS SUBSTANCES ACT (HSA)

HSA is a labelling law administered by the Department and is the State counterpart of the Federal Hazardous Substances Act of 1960.

II. TRANSPORTATION OF HAZARDOUS SUBSTANCES

Regulations concerning ~~of~~ the transportation of hazardous substances are contained in several sections of the California Code. The CHP has adopted a definition of hazardous materials and has regulatory and enforcement authority concerning the operation of trucks, shipping, packaging and licensing of haulers and drivers.

AB 1861, Campbell, (85) authorizes the establishment by the CHP, working with local government, of specified routes, parking and stopping places for transporters of hazardous wastes.

~~S~~AB 2030, Hart (84) authorizes the closure of specified highways to vehicles transporting hazardous wastes if certain requirements are met.

III. EMERGENCY RESPONSE

The Office of the State Fire Marshall has the power to adopt regulations concerning the design and construction of cargo tanks; standards regarding the sale, use, handling, possession and storage

of explosives. The county governments may enact and enforce regulations at least as restrictive.

AB 2457, Young (84) transfers enforcement, inspection and registration cargo and vehicle tanks carrying flammable and combustible liquids to the CHP and authorizes the Department of Transportation to approve local regulations on the restriction or prohibition of use of tunnels on state highways for vehicles transporting hazardous materials.

IV. HAZARDOUS SUBSTANCES INFORMATION AND TRAINING ACT (HSITA-WORKER RIGHT -TO-KNOW)

Requires handling of hazardous materials to protect worker health and safety, mandates the preparation of Materials Safety Data Sheets (MSDS) and other communications of hazard information to employees and the training of employees to avoid risks to health.

V. CALIFORNIA HAZARDOUS WASTE CONTROL LAW (HWCL)

Empowers the Department to manage hazardous wastes by regulating those who generate, transport and dispose of such materials. Such regulations must be at least as strict as RCRA, but may be more restrictive.

AB 2239, Sher, (85) requires existing laws requiring the local agency permitting of underground storage tanks to be implemented by January 1988.

AB 3566, Katz, (84) enacts the Toxic Pits Cleanup Act of 1984 and prohibits the discharge of liquid hazardous wastes into a surface impoundment within one half mile of a potential source of drinking water after June 1988, and sets reporting requirements and other discharge requirements regarding the discharge of liquid hazardous wastes into surface impoundments.

AB 2958, Connelly, (85) enacts the Toxic Injection Well Control Act of 1985 which regulates the injection of hazardous wastes into underground wells after January 1988 if the well is within one half mile of drinking water and otherwise regulates the use of injection wells for the disposal of hazardous wastes.

SB 509, Carpenter (85) requires incineration of hazardous wastes having a heating value of more than 3,000 Btu's after January 1988 and sets other requirements for the disposal of volatile organic compounds.

AB 2185-87, 3777 Waters (85,86,87) requires all businesses handling hazardous materials to submit a plan for emergency response to incidents and disclose the location and handling procedures for all such materials to local government and requires local implementing agencies to submit an areawide emergency response plan within six

months after adoption of regulations or September, 1986, whichever comes first.

AB 0685, Farr (85) enacts the Hazardous Waste Reduction, Recycling and Treatment Research and Demonstration Act of 1985 requiring the provision of funding for grants and demonstration of hazardous waste technologies and appropriates \$1 million annually for waste reduction research and demonstration efforts to be sponsored by the Department.

AB 3750, Cortese (86) requires the Department to compile a list of hazardous waste and substance sites, to update at least annually, and to distribute to cities and counties in which the sites are located. The bill further requires that each applicant for a development project to submit a signed statement indicated whether the project is located on a tested site, as a part of the development application submitted to the local permitting agency.

AB 2370 (1980) sets procedures for the determination by the Department of a border zone for hazardous waste property and allows restrictions as to the use of such property.

SB 1406, Petris (86) require's specified written disclosures to prospective transferees of real property improved with one to four dwelling units, including information concerning landfills or other soil problems on the property.

SB 1500, Roberti (86) enacts the Hazardous Waste Management Act of 1986 and prohibits the land disposal of untreated hazardous wastes by May, 1990, and requires the Department to adopt treatment standards on or before that date.

VI. WATER RESOURCES CONTROL BOARD TITLE 26, Sec 23-2510-2610

Sets regulations pertaining to water quality aspects of waste discharge to land and establishes waste management requirements for waste treatment, storage and disposal in landfills, surface impoundments, waste piles and land treatments. Provides for waste discharge permits, defines siting criteria, engineering, construction, operating and closure standards for Class I, II, and II-I landfills. Sets construction, monitoring, closure, reporting, repair and permit requirements for underground storage tanks.

VII. PORTER COLOGNE WATER QUALITY ACT

Designates the Water Resources Control Board as the state water pollution control agency and requires Regional Water Quality Control Boards (RWQCB) to establish procedures for any person discharging wastes, except into a community sewer system, that could affect the quality of the state's waters. The RWQCB's may issue cleanup and abatement orders for violators of discharge requirements.

VIII. AIR RESOURCES CONTROL ACT

For toxic air contaminants, the Department is to evaluate certain potential toxic air contaminants and the Air Resources Board is to develop appropriate control methods to achieve established standards.

STATE AND FEDERAL LAND DISPOSAL RESTRICTIONS

CALIFORNIA LAND DISPOSAL RESTRICTION PROGRAM

The State's Land Disposal Restriction Program was initiated in December 1982 when the Department adopted regulations specifying a schedule of land disposal restrictions for specific hazardous wastes to be implemented, contingent upon the availability of alternative treatment and/or recycling capacity in the State. During the ensuing four years, five of the restrictions were implemented as shown below. The restrictions for solid halogenated organics were postponed until July 8, 1987, due to a lack of treatment capacity in California. This date is in concert with the HSWA Amendments of 1984, that mandate a federal land disposal restriction program to be implemented nationwide. SB 509 of 1985 (Carpenter) and SB 1500 of 1986 (Roberti) expanded the California land disposal restriction program and set a number of deadlines for future restriction of hazardous waste from land disposal. The ultimate deadline for the restriction of land disposal of untreated hazardous wastes in California is May 1990.

CALIFORNIA LAND DISPOSAL RESTRICTIONS SCHEDULE

CALIFORNIA LAND DISPOSAL RESTRICTIONS

DATES

WASTE RESTRICTED

June 1, 1983	o	Liquids containing free cyanides at concentration greater than or equal to 1000 mg/l.
January 1, 1984	o	Liquid hazardous wastes containing the following dissolved metals (or elements) or compounds of these metals (or elements) at concentrations greater than or equal to those specified below:
		Arsenic and/or compounds (as As) 500 mg/l
		Cadmium and/or compounds (as Cd) 100 mg/l
		Chromium (VI) and/or compounds
		(as Cr ^{+VI}) 500 mg/l
		Lead and/or compounds (as Pb) 500 mg/l
		Mercury and/or compounds (as Hg) 20 mg/l
		Nickel and/or compounds (as Ni) 134 mg/l
		Selenium and/or compounds (as Se) 100 mg/l
		Thallium and/or compounds (as Th) 130 mg/l

- o Liquid hazardous wastes having a pH less than or equal to two (2.0).
- o Liquid hazardous wastes containing polychlorinated biphenyls at concentrations greater than or equal to 50 mg/l.

January 1, 1985	Liquid hazardous wastes containing halogenated organic compounds in total concentrations greater than or equal to 1,000 mg/kg.
July 8, 1987	Solid hazardous wastes containing halogenated organic compounds in total concentrations greater than or equal to 1,000 mg/kg.
January 1, 1988	Waste with heat value of 3000 BTU/lb or more. (SB 509)
January 1, 1990	Waste with volatile organic concentration 1-7% to be set by the Department. (SB 509,)
May 8, 1990	Deadline for land disposal of untreated hazardous wastes. (SB 1500)

FEDERAL LAND DISPOSAL RESTRICTIONS

Section 3004 of the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), prohibits the continued placement of RCRA-regulated hazardous wastes in or on the land, including placement in landfills, land treatment areas, waste piles, and surface impoundments (with certain exceptions for surface impoundments used for the treatment of hazardous wastes). The amendments specify dates by which these prohibitions are to take effect for specific hazardous wastes. However, the Environmental Protection Agency (EPA) may extend these effective dates for up to 2 years nationwide, if they determine that there is insufficient capacity. The statute requires EPA to set "levels or methods of treatment, if any, which substantially diminish the toxicity of the waste...so that short-and long-term threats to human health and the environment are minimized." After the effective date of a prohibition, wastes may be land disposed in Subtitle C facilities if they comply with treatment standards under 3004 (m) or the Agency has approved a site-specific petition demonstrating, to a reasonable degree of certainty, that there will be no migration from the disposal unit for as long as the waste remains hazardous. The Agency first proposed a rule to implement these congressional requirements on January 14, 1986, (51 FR 1602-1766). The final rule was published on November 7, 1986 (51 FR 40571-40640).

FEDERAL LAND DISPOSAL RESTRICTIONS SCHEDULE:

DATE

WASTE RESTRICTED

May 8, 1985	Bulk liquids in landfills; even if absorbents have been added.
November 8, 1986	Solvent Waste - Twenty-seven commonly used organic solvents and solvent mixtures which resulted from use of solvent with 10 percent or more of solvent material. These solvents are listed as EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005. This listing doesn't include solvents used as chemical intermediaries in manufacturing processes. The solvents include both spent halogenated, non-halogenated solvents, and still bottoms from the recovery of these solvents. TABLE 1 explains the EPA extensions granted certain generator or categories of the solvent wastes. TABLE 2 shows the technology based treatment levels for each restricted solvent above which land disposal (except by injection well) is prohibited.
	NOTE: Lab packs containing these solvents are also subject to the prohibition.
July 8, 1987	"The California List" - Proposed rule expected by December 1986.

August 8, 1988	<p>First third of all RCRA listed waste.</p> <p>Decision on underground injection.</p> <p>Clean up wastes subject to restrictions.</p>
November 8, 1988	<p>Dioxin containing wastes - These dioxin containing wastes are listed in EPA categories F020 to F028. These categories include the wastes from manufacturing of these materials;</p> <p>trichlorophenol</p> <p>tetrachlorophenol</p> <p>pentachlorophenol</p> <p>tetrachlorobenzene</p> <p>pentachlorobenzene</p> <p>hexachlorobenzene</p> <p>All solvent wastes which received categorical extensions from November 8, 1986 date.</p>
June 8, 1989	<p>Second third of all RCRA listed waste.</p>
May 8, 1990	<p>Last third of all RCRA listed waste (see attached lists for details)</p>

TABLE I

FEDERAL LAND DISPOSAL RESTRICTIONS FOR SOLVENTS CATEGORICAL EXTENSIONS

Solvent wastes that meet any one of the following criteria are subject to an extension and will not be restricted from land disposal until November 8, 1988. The criteria are:

1. The generator of the solvent waste is a small quantity generator of 100-1000 kilograms of hazardous waste per month.
2. The solvent waste is generated from any remedial or response action taken under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) or any corrective action taken under the Resource Conservation and Recovery Act of 1976 (RCRA).
3. The solvent waste is a solvent-water mixture containing less than 1 percent total F001-F005 solvent constituents or containing less than 1 percent total organic carbon.
4. The solvent waste is a solvent-inorganic sludge mixture or a solvent contaminated soil (non-CERCLA or RCRA corrective action) containing less than 1 percent total F001-F005 solvents constituents.

EPA will also entertain exemption requests on a case-by-case basis.

APPENDIX D

CONTAMINATED SITES LIST

(ACCOMPANIES MAP NO. 4)

APPENDIX D

CONTAMINATED SITES LIST: INDUSTRIAL WASTE SITES, CONTAMINATED PUBLIC WELLS, AND UNDERGROUND TANK LEAKS

The following list accompanies Map No. 4, Contaminated Sites List, of the Tulare County Hazardous Waste Management Plan.

The list contains codes for data source such as DHS, DHS2, and so on. The next six paragraphs define the data provided by each source, the agency that provided the information, and a contact person. Where no data source is listed, the information was provided by the Tulare County Division of Environmental Health.

The data is current as of the month of January 1988. Both the data and the maps with which it corresponds are expected to be updated at least at six month intervals. Therefore, the next update should be completed by July of 1988.

Data Source Definitions and Contacts

DHS: Records that have been compiled by the Toxic Substances Control Division of the Department of Health Services. This code indicates an abandoned hazardous waste site.

Laura K. Uoshii, Chief
Toxic Substance Control Division
Program Policy & Evaluation
1219 K Street, Room 300
Sacramento, CA 95814 (916) 324-7193

DHS2: Records that have been compiled by the Environmental Health Division of the Department of Health Services. This code indicates public water drinking wells that serve less than 200 connections ("small wells").

Harvey F. Collins, Ph.D.
Chief, Environmental Health Division
714 P Street, Room 626
Sacramento, CA 95814 (916) 322-2308

DHS3: Records that have been compiled by the Environmental Health Division of the Department of Health Services and consist of public water drinking wells that serve more than 200 connections ("large wells").

David L. Storm, Ph.D.
Environmental Health Division
714 P Street, Room 616
Sacramento, CA 95814 (918) 323-6111

DHS5: Sites pursuant to Section 25356 of the Health and Safety Code (sites included under the Hazardous Substance Cleanup Bond Act).

Vickie Vandergriff
Toxics Substances Control Division
Site Mitigation Unit
714/744 P Street/P. O. Box 942732
Sacramento, CA 94234-7320 (916) 324-3773

WRCB: Records compiled by the Water Resources Control Board. These are sites of reported leaks that have been investigated by the WRCB.

Allan V. Patton
Environmental Specialist
SWRCB
901 P Street
Sacramento, CA 95814 (916) 324-9495

CWMB: Records compiled by the California Waste Management Board. These are solid waste disposal facilities from which there is a known migration of hazardous waste.

George T. Eowan
Chief Executive Officer
1020 9th Street, Suite 300
Sacramento, CA 95814 (916) 322-3330

Industrial Waste Sites

<u>Site Number</u>	<u>Township/ Section/ Range</u>	<u>Address/Data Source</u>
001	21-27-25	SITE: Jones JD Agricultural Spraying ADDRESS: 610 E. Grand Avenue CITY: Porterville 93257 DATA SOURCE: DHS
002	21-27-22	SITE: 7-Eleven #2241-22928 ADDRESS: 1174 West Henderson CITY: Porterville 93309 DATA SOURCE: WRCB
003	20-27-32	SITE: Strathmore Packing House Co. ADDRESS: 19757 Orange Belt Drive CITY: Strathmore 93267 DATA SOURCE: WRCB
004	23-27-11	SITE: Bargsten, Darryll Orchard Maintenance ADDRESS: 8647 Road 248 CITY: Terra Bella 93270 DATA SOURCE: DHS

005	23-27-02	SITE: Crumblis & Horton AKA: Cri-Fly Service ADDRESS: 24569 Avenue 90 CITY: Terra Bella 93270 DATA SOURCE: DHS
006	17-23-16	SITE: Britz, Inc. ADDRESS: 36624 Burke Drive CITY: Traver 93273 DATA SOURCE: DHS
007		SITE: 7-Eleven #2241-22087 ADDRESS: 1367 East Tulare Street CITY: Tulare 93274 DATA SOURCE: WRCB
008	20-25-14	SITE: Cam Chemicals ADDRESS: 21636 Road 152 CITY: Tulare 93274 DATA SOURCE: DHS
009	19-23-28	SITE: Westernair ADDRESS: 3797 Avenue 248 CITY: Tulare 93274 DATA SOURCE: DHS
010	19-25-01	SITE: ICI Americas, Inc. ADDRESS: 498 N. Mariposa Avenue CITY: Visalia 93277 DATA SOURCE: DHS
011	18-25-28	SITE: So. Calif. Edison #1 - Visalia Pole Yard ADDRESS: 432 Ben Maddox Way CITY: Visalia 93277 DATA SOURCE: DHS
012	18-34-30	SITE: Delta Plastics Co ADDRESS: 7449 Avenue 304 CITY: Visalia 93291 DATA SOURCE: DHS
013	17-26-36	SITE: Orange Belt Supply Co. ADDRESS: 515 West Naranjo CITY: Woodlake 93257 DATA SOURCE: WRCB
014	17-26-36	SITE: Four Seasons Grove Care & Spraying ADDRESS: 599 West Naranjo CITY: Woodlake 93257 DATA SOURCE: DHS
015	17-26-36	SITE: Orange Belt Supply Co. (2) ADDRESS: 515 West Naranjo CITY: Woodlake 93257 DATA SOURCE: DHS (same site as #13, but different problem)

016	16-24-17	SITE: So. Calif. Gas Co. - Dinuba Site ADDRESS: Previously known as Dinuba Child Care CITY: Dinuba 93618 DATA SOURCE: DHS5
017	23-25-06	SITE: Harmon Field ADDRESS: Airport Rd. & Terra Bella Rd. CITY: Pixley 93256 DATA SOURCE: DHS5
018	22-27-02	SITE: Beckman Instruments, Inc. Porterville Plant-Get Facilities ADDRESS: 167 West Poplar Ave. CITY: Porterville 93257 DATA SOURCE: DHS5
019	20-23-10	SITE: Village Market ADDRESS: 4620 Avenue 228 CITY: Tulare 93274 DATA SOURCE: DHS5
020	81-24-25	SITE: Kaweah Crop Duster - Green Acres Airport ADDRESS: 2530 West Goshen CITY: Visalia 93291 DATA SOURCE: DHS5
021	18-24-19	SITE: Goshen Construction Site ADDRESS: Assessor's Parcel Number CITY: Visalia 93279 DATA SOURCE: DHS5
022	18-24-28	SITE: Stanley Bostitch (AKA Bostitch, Division of Textron, Inc. ADDRESS: 6911 West Goshen CITY: Visalia 93291 DATA SOURCE: DHS5
023	21-27-10	SITE: Euclid Citrus Association ADDRESS: 23744 Avenue 181 CITY: Strathmore 93267 DATA SOURCE: CERCLIS
024	21-27-22	SITE: Incom International Inc., Morse Control Division ADDRESS: 914 W. Pioneer Avenue CITY: Porterville 93257 DATA SOURCE: CERCLIS
025	16-25-19	SITE: Orosi Public Utilities Dist. ADDRESS: Road 120 & Avenue 404 CITY: Cutler 93615 DATA SOURCE: CERCLIS

026	20-24-5	SITE: Tulare Muni Airport ADDRESS: 411 E. Kern Avenue CITY: Tulare 93274 DATA SOURCE: CERCLIS
027	16-23-13	SITE: Dinuba Municipal Sewage Treatment Plant ADDRESS: 6675 Avenue 412 CITY: Dinuba 93618 DATA SOURCE: CERCLIS
028	19-25-12	SITE: City of Farmersville ADDRESS: Farmersville Road and Outside Circle Road CITY: Farmersville 93223 DATA SOURCE: CERCLIS
029	18-24-30	SITE: McGraw-Edison Power System ADDRESS: 7533 Avenue 304 CITY: Visalia 93277 DATA SOURCE: CERCLIS, RCRA
030	20-23-09	SITE: Oxychem Tulare ADDRESS: 4295 Avenue 228 & Rd. 44 CITY: Tulare 93274 DATA SOURCE: CERCLIS
031	18-24-05	SITE: Visalia Disposal Site ADDRESS: County Rd. 80 & Ave. 328 CITY: Visalia 93274 DATA SOURCE: CERCLIS
032	18-24-29	SITE: Eltra Corporation, Prestolite Battery ADDRESS: 8127 Avenue 304 CITY: Visalia 93277 DATA SOURCE: CERCLIS
033	18-24-29	SITE: Moore Business Forms, Inc. ADDRESS: 7801 Avenue 304 CITY: Visalia 93277 DATA SOURCE: CERCLIS, RCRA
034		
035	08-24-27	SITE: Sunstar Plastics Property ADDRESS: 6707 West Goshen CITY: Visalia 93291 DATA SOURCE:
036	21-28-30	SITE: Sunrise Handy Market (AKA Mr. C's Minimarket) ADDRESS: 809 E. Putnam CITY: Porterville 93257 DATA SOURCE:

037	20-27-33	SITE: Sunrise Handy Market ADDRESS: 23012 Avenue 196 CITY: Strathmore DATA SOURCE:
038	20-26-35	SITE: Woo's Mini Market ADDRESS: 19635 Road 196 CITY: Plainview DATA SOURCE:
039	29-26-34	SITE: Tulare County Landfill at Exeter ADDRESS: CITY: Exeter 93221 DATA SOURCE:
040	7-26-36	SITE: Tulare County Landfill at Woodlake ADDRESS: CITY: Woodlake 93256 DATA SOURCE:
041	12-27-18	SITE: Tulare County Landfill at Porterville ADDRESS: CITY: Porterville 93257 DATA SOURCE:
042	18-23-14	SITE: California Acid Delinting ADDRESS: 31817 Road 60 CITY: Goshen 93291 DATA SOURCE:
043	14-27-36	SITE: Porterville Gasoline Leak ADDRESS: Intersection of Plano & Vandelia CITY: Porterville 93257 DATA SOURCE:
044	17-24-01	SITE: Central Valley Hyde ADDRESS: 10875 Avenue 384 CITY: Dinuba 93618 DATA SOURCE:
045	18-24-21	SITE: Kawneer ADDRESS: 7200 Doe CITY: Visalia 93277 DATA SOURCE:
046	18-24-21	SITE: Reichhold (AKA BP Performance Polymers) ADDRESS: 7227 Doe CITY: Visalia 93779 DATA SOURCE:
047	19-27-31	SITE: Harvest Container Company ADDRESS: 24476 Road 216 - Ave. 245 & Road 216 CITY: Lindsay 93247 DATA SOURCE:

048	21-27-22	SITE: AP&F Drum Company ADDRESS: Southwest Corner of St. Hw. 65 & Westfield CITY: Porterville 93257 DATA SOURCE:
049	21-27-22	SITE: FMC Corporation ADDRESS: 22700 Road 196 CITY: Lindsay 93247 DATA SOURCE:
050	20-24-23	SITE: Imperial Pallet ADDRESS: 4266 South "K" Street CITY: Tulare DATA SOURCE:
051	16-24-17	SITE: Flex Multilayers ADDRESS: CITY: Dinuba DATA SOURCE:
052	16-24-17	SITE: Low Max Plating & Polishing ADDRESS: 273 South "M" CITY: Dinuba 93618 DATA SOURCE: DHS
053	16-24-26	SITE: Warren & Baerg Mfg. Inc. ADDRESS: 39950 Road 108 CITY: Dinuba 93618 DATA SOURCE: DHS3
054	19-26-27	SITE: Pruner Airport ADDRESS: 24998 Road 188 CITY: Exeter 93221 DATA SOURCE: DHS
055	18-25-01	SITE: Leffingwell Chemical Co. (4) ADDRESS: 32899 Road 159 CITY: Ivanhoe 93235 DATA SOURCE: DHS
056	20-27-20	SITE: Old Drew Plant ADDRESS: Road 220 and Avenue 216 CITY: Lindsay 93247 DATA SOURCE: DHS
057	23-25-22	SITE: Earlimart Dusters ADDRESS: 6589 Road 144 CITY: Pixley 93256 DATA Source: DHS

Contaminated Public Wells

<u>Site Number</u>	<u>Township/ Section/ Range</u>	<u>Address/Data Source</u>
200	21-27-15	SITE: Grandview Gardens Water Co. ADDRESS: N. Grand and Douglas CITY: Porterville 93257 DATA SOURCE: DHS2
201	18-24-35	SITE: Lindwood Mutual Water Co. ADDRESS: Meadow Land and Fulgram CITY: Visalia 93291 DATA SOURCE: DHS2
202	21-28-24	SITE: Lake Success Mobile Lodge ADDRESS: 30464 Highway 190 CITY: Porterville 93257 DATA SOURCE: DHS2
203	21-27-27	SITE: Walnut Grove Trailer Park ADDRESS: 1078 West Bellview CITY: Porterville 93257 DATA SOURCE: DHS2
204	16-24-07	SITE: Well 09 ADDRESS: LAT = 36 33 00 OLONG = 119 24 00 CITY: Dinuba 93618 DATA SOURCE: DHS3
205	16-24-27	SITE: Well 01 ADDRESS: LAT = 36 33 00 OLONG = 119 23 00 CITY: Dinuba 93618 DATA SOURCE: DHS3
206	16-24-17	SITE: Well 04 ADDRESS: LAT = 36 32 00 OLONG = 119 24 00 CITY: Dinuba 93618 DATA SOURCE: DHS3
207	16-24-18	SITE: Well 05 ADDRESS: LAT = 36 33 00 OLONG = 119 24 00 CITY: Dinuba 93618 DATA SOURCE: DHS3
208	18-25-30	SITE: Well 25-01 ADDRESS: LAT = 36 19 00 OLONG = 119 20 00 628 W. Oak CITY: Visalia 93291 DATA SOURCE: DHS3

209	18-24-36	SITE: Well 21-01 ADDRESS: LAT = 36 19 00 OLONG = 119 19 00 West Iris & Linda Vista CITY: Visalia 93291 DATA SOURCE: DHS3
210	18-25-29	SITE: Well 03 ADDRESS: LAT = 36 24 00 OLONG = 119 13 00 Court & NE 4th CITY: Visalia 93291 DATA SOURCE: DHS3
211	18-25-19	SITE: Well 01 ADDRESS: LAT = 36 23 00 OLONG = 119 12 00 CITY: Visalia DATA SOURCE: DHS3
212	18-25-30	SITE: Well 02 ADDRESS: LAT = 36 23 00 OLONG = 119 13 00 West Main & Johnson CITY: Visalia DATA SOURCE: DHS3
213	18-5-28	SITE: Well 30-02 ADDRESS: LAT = 36 20 00 OLONG = 119 16 00 Cain at Mill Creek CITY: Visalia DATA SOURCE: DHS3
214	18-25-29	SITE: Well 12-01 ADDRESS: LAT = 36 20 00 OLONG = 119 17 00 Roosevelt & Santa Fe CITY: Visalia DATA SOURCE: DHS3
215	18-25-29	SITE: Site 03-03 ADDRESS: LAT = 36 20 00 OLONG = 119 17 00 North Court & NE 4th CITY: Visalia DATA SOURCE: DHS3
216	18-25-29	SITE: Well 07-01 ADDRESS: LAT = 36 20 00 OLONG = 119 17 00 Acequia & Oakhurst CITY: Visalia DATE SOURCE: DHS3
217	18-25-30	SITE: Well 05-03 ADDRESS: LAT = 36 20 00 OLONG = 119 18 00 Stevenson & Goshen CITY: Visalia DATA SOURCE: DHS3

218	18-25-30	SITE: Well 05-02 ADDRESS: LAT = 32 20 00 OLONG = 119 18 00 Stevenson & Goshen CITY: Visalia DATA SOURCE: DHS3
219	18-25-30	SITE: Well 16-01 ADDRESS: Elm & West Main CITY: Visalia DATA SOURCE: DHS3
220	20-27-27	SITE: North Sect 8 Well ADDRESS: LAT = 36 12 00 OLONG = 119 04 00 CITY: Lindsay DATA SOURCE: DHS3
221	20-27-08	SITE: South Sect 8 Well ADDRESS: LAT = 36 12 00 OLONG = 119 04 00 CITY: Lindsay DATA SOURCE: DHS3
222	20-27-08	SITE: Stock Sec 8 Well ADDRESS: LAT = 36 12 00 OLONG = 119 04 00 CITY: Lindsay DATA SOURCE: DHS3
223	20-27-05	SITE Well 03 ADDRESS: LAT = 36 09 00 OLONG = 119 03 00 CITY: Lindsay DATA SOURCE: DHS3
224	21-27-03	SITE: Coffman Apartments W.S. ADDRESS: 18708 Orange Belt Drive CITY: Strathmore, CA 93267 DATA SOURCE:
225	18-25-33	SITE: Divisadero Jr. High School W.S. ADDRESS: 1200 So. Divisadero CITY: Visalia DATA SOURCE:
226	16-25-18	SITE: El Monte School W.S. ADDRESS: 41465 Road 127 CITY: Orosi DATA SOURCE:
227	21-27-15	SITE: Johnson Apartments W. S. ADDRESS: 1606 North Prospect CITY: Porterville DATA SOURCE:
228	18-25-31	SITE: Mt. Whitney High School W.S. ADDRESS: 900 South Conyer CITY: Visalia DATA SOURCE:

229	18-25-30	SITE: Redwood High School W.S. ADDRESS: Main & Giddings CITY: Visalia DATA SOURCE:
230	18-24-25	SITE: Tulare County Civic Center W.S. ADDRESS: Burrel Street CITY: Visalia 93291 DATA SOURCE:
231	21-29-10	SITE: Rancho Monte Vista W. S. ADDRESS CITY: Springville DATA SOURCE:
232	18-25-30	SITE: Well 08-01 ADDRESS: LAT = 36 20 00 OLONG = 119 19 00 Sierra Drive & Dollner CITY: Visalia DATA SOURCE: DHS3
233	18-25-30	SITE: Well 02-03 ADDRESS: LAT = 36 20 00 OLONG = 119 18 00 West Main & Johnson CITY: Visalia DATA SOURCE: DHS3
234	18-25-31	SITE: Well 06-02 ADDRESS: LAT = 36 20 00 OLONG = 119 18 00 Kaweah & Jacob CITY: Visalia DATA SOURCE: DHS3
235	18 25 31	SITE: Well 06-03 ADDRESS: LAT = 36 20 00 OLONG = 119 18 00 Kaweah & Jacob CITY: Visalia DATA SOURCE: DHS3
236	18-25-31	SITE: Well 13-01 ADDRESS: LAT = 36 19 00 OLONG = 119 19 00 Tulare Avenue & Bonnie Lane CITY: Visalia DATA SOURCE: DHS3
237	18-25-31	SITE: Well 17-01 ADDRESS: LAT = 36 19 00 OLONG = 119 18 00 Giddings & Tulare CITY: Visalia DATA SOURCE: DHS3
238	18-25-31	SITE: Well 04-04 ADDRESS: LAT = 36 19 00 OLONG = 119 18 00 Laurel & South Court CITY: Visalia DATA SOURCE: DHS3

239	18-25-31	SITE: Well 04-03 ADDRESS: LAT = 36 19 00 OLONG = 119 18 00 Laurel & South Court CITY: Visalia DATA SOURCE: DHS3
240	19-25-06	SITE: Well 23-01 ADDRESS: LAT = 36 18 00 OLONG = 119 19 00 Ashland and East of Mooney CITY: Visalia DATA SOURCE: DHS3
241	18-25-19	SITE: Well 09 ADDRESS: LAT = 36 18 00 OLONG = 119 09 00 Houston, east of Leslie CITY: Visalia DATA SOURCE: DHS3

Underground Tank Leaks

<u>Site Number</u>	<u>Township/ Section/ Range</u>	<u>Address/Data Source</u>
400	23-27-34	SITE: Ducor Elementary ADDRESS: 23761 Avenue 56 CITY: Ducor 93218 DATA SOURCE:
401	23-25-31	Mellow & Sons ADDRESS: 13029 Avenue 72 CITY: Pixley 93256 DATA SOURCE:
402	20-27-33	SITE: Kurz Trucking ADDRESS: 23139 Avenue 196 CITY: Strathmore 93267 DATA SOURCE:
403	18-25-36	SITE: Hathaways Nursery ADDRESS: 16013 Avenue 295 CITY: Visalia 93277 DATA SOURCE:
404	16-23-12	SITE: Dinuba Auto Court Market ADDRESS: 6876 Avenue 416 CITY: Dinuba 93618 DATA SOURCE:
405	18-25-28	SITE: Ingram Pump Company ADDRESS: 604 N. Ben Maddox CITY: Visalia 93277 DATA SOURCE:

406	22-27-34	SITE: Muller Irrigation ADDRESS: 9537 Clemens Road CITY: Terra Bella 93270 DATA SOURCE:
407	19-25-01	SITE: Pete Giotta Garage ADDRESS: 729 North Farmersville Blvd. CITY: Farmersville 93223 DATA SOURCE:
408		SITE: Smith Auto Parts ADDRESS: 153 South "K" CITY: Dinuba 93618 DATA SOURCE:
409	20-24-23	SITE: Turnupseed Electric ADDRESS: 1580 South "K" CITY: Tulare 93274 DATA SOURCE:
410	19-27-07	SITE: R. E. Haven, Inc. ADDRESS: 250 W. Lindmore CITY: Lindsay 93247 DATA SOURCE:
411		SITE: Vetter & Vetter ADDRESS: 232 South "M" CITY: Dinuba 93618 DATA SOURCE:
412	22-25-32	SITE: Puregro Co. ADDRESS: 280 South Main CITY: Pixley 93256 DATA SOURCE:
413	22-25-32	SITE: Pixley Shell ADDRESS: 310 South Main CITY: Pixley 93256 DATA SOURCE:
414	22-25-32	SITE: Pixley Texaco ADDRESS: 388 North Main CITY: Pixley 93256 DATA SOURCE:
415	18-25-28	SITE: Century Distributors ADDRESS: 2417 E. Main CITY: Visalia 93291 DATA SOURCE:
416		SITE: Wind Machine Sales ADDRESS: 1460 South Mirage CITY: Lindsay 93247 DATA SOURCE:

417	20-31-27	SITE: Alpine Village ADDRESS: Redwood & Alpine CITY: Camp Nelson DATA SOURCE:
418	16-24-20	SITE: Alvin J. Dick ADDRESS: 40508 Road 84 CITY: Dinuba 93618 DATA SOURCE:
419	17-24-13	SITE: Sequoia Field ADDRESS: 36000 Road 112 CITY: Visalia 93291 DATA SOURCE:
420	19-26-18	SITE: Outside Creek School ADDRESS: 26452 Road 164 CITY: Farmersville DATA SOURCE:
421	21-26-34	SITE: Mountain View Market ADDRESS: 14721 Road 192 CITY: Poplar 93257 DATA SOURCE:
422	23-27-03	SITE: Terra Bella School ADDRESS: 9364 Road 238 CITY: Terra Bella 93270 DATA SOURCE:
423	22-27-34	SITE: Terra Bella Mobile ADDRESS: 23171 Avenue 96 CITY: Terra Bella 93270 DATA SOURCE:
424	18-25-29	SITE: Miller Oil & Auto Parts ADDRESS: 101 NE Third CITY: Visalia 93291 DATA SOURCE:
425		SITE: Jim Manning Dodge ADDRESS: 194 West Tulare CITY: Dinuba 93618 DATA SOURCE:
426		SITE: Sierra Citrus Packing ADDRESS: 715 E. Tulare CITY: Lindsay 93247 DATA SOURCE:
427		SITE: Trajano Borgas ADDRESS: 1126 South West CITY: Tulare 93274 DATA SOURCE:

428	14-28-05	SITE: Grant Grove Gas Station ADDRESS: Sequoia National Park CITY: DATA SOURCE:
429	14-28-05	SITE: Grant Grove Meadow Camp ADDRESS: Sequoia National Park CITY: DATA SOURCE:
430	16-30-06	SITE: Giant Forest Lodge ADDRESS: Sequoia National Forest CITY: DATA SOURCE:
431	16-24-06	SITE: Conway Property ADDRESS: 42527 Road 80 CITY: Dinuba 93618 DATA SOURCE:
432	14-29-25	SITE: Montecito-Sequoia Camp ADDRESS: Sequoia National Park CITY: DATA SOURCE:
433	18-25-29	SITE: Recycling Unlimited ADDRESS: 525 North Bridge CITY: Visalia 93291 DATA SOURCE:
434	22-28-06	SITE: Porterville Development Center ADDRESS: 26501 Avenue 140 CITY: Porterville 93257 DATA SOURCE:
435	21-27-06	SITE: Hollace Miller ADDRESS: 21385 Avenue 188 CITY: Strathmore 93267 DATA SOURCE:
436	21-27-36	SITE: Brown's Shell Service ADDRESS: 652 East Date CITY: Porterville 93257 DATA SOURCE:
437	21-27-36	SITE: C & S Distributing ADDRESS: 65 West Date CITY: Porterville 93257 DATA SOURCE:
438	19-25=12	SITE: Farmersville Corp. Yard ADDRESS: 873 S. Farmersville Blvd. CITY: Farmersville 93223 DATA SOURCE:

439	18-25-01	SITE: Ivanhoe Fire Department ADDRESS: 32868 Hawthorne CITY: Ivanhoe 93235 DATA SOURCE:
440	24-25-22	SITE: Bingo Truck Stop ADDRESS: Highway 99 & Avenue 16 CITY: Delano 93215 DATA SOURCE:
441	20-24-03	SITE: Orosco Hoffman ADDRESS: "J" and Cross CITY: Tulare 93274 DATA SOURCE:
442	20-24-02	SITE: Evans Motel ADDRESS: 1128 North "J" CITY: Tulare 93274 DATA SOURCE:
443	19-24-12	SITE: Arco AM-PM Market ADDRESS: 3611 South Mooney CITY: Visalia DATA SOURCE:
444	18-25-30	SITE: A-C Electric ADDRESS: 1035 West Murray CITY: Visalia 93291 DATA SOURCE:
445	20-26-11	SITE: FMC Corporation ADDRESS: 22700 Road 196 CITY: Lindsay 93247 DATA SOURCE:
446	21-28-30	SITE: Mr. C's Mini-Mart (AKA Sunrise Handy Market) ADDRESS: 809 East Putman CITY: Porterville 93257 DATA SOURCE:
447	21-27-36	SITE: Larry Parker ADDRESS: 353 E. Vandalia (Plano & Vandalia) CITY: Porterville 93257 DATA SOURCE:
448	18-25-29	SITE: Putnam Windh ADDRESS: 333 Burke Street CITY: Visalia 93291 DATA SOURCE:
449	20-26-35	SITE: Plainview (AKA Woo's Minimarket) ADDRESS: 19635 Road 196 CITY: Plainview DATA SOURCE:

450	21-27-22	SITE: 7-11 ADDRESS: 1174 West Henderson CITY: Porterville DATA SOURCE:
451	18-24-36	SITE: Shell Oil Company ADDRESS: 1013 South Mooney CITY: Visalia 93277 DATA SOURCE:
452	20-27-32	SITE: Strathmore Packing House ADDRESS: 19757 Orange Belt Drive CITY: Strathmore 93267 DATA SOURCE:
453	20-27-33	SITE: Sunrise Hardy Market ADDRESS: 23013 Avenue 196 CITY: Strathmore 93267 DATA SOURCE:
454	19-25-06	SITE: Time Oil Company ADDRESS: 2440 South Mooney Blvd. CITY: Visalia 93227 DATA SOURCE:
455	20-24-11	SITE: Tulare County Municipal Court ADDRESS: 425 East Kern CITY: Tulare 93274 DATA SOURCE:
456	17-26-36	SITE: City of Woodlake ADDRESS: 597 South Valencia CITY: Woodlake 93286 DATA SOURCE:
457	21-27-35	SITE: Texaco ADDRESS: 921 West Olive CITY: Porterville DATA SOURCE:
458	17-26-33	SITE: El Rancho Market ADDRESS: 34040 Millwood CITY: Woodlake DATA SOURCE:
459	16-24-17	SITE: Harness Oil ADDRESS: 1150 East El Monte Way CITY: Dinuba DATA SOURCE:
460	18-28-06	SITE: Kaweah Lake ADDRESS: Kaweah Lake CITY: DATA SOURCE:

461	19-25-03	SITE: So. Calif. Edison - Rector Substation ADDRESS: 28361 Road 148 CITY: Visalia 93277 DATA SOURCE:
462	18-25-28	SITE: So. Calif. Edison ADDRESS: 432 N. Ben Maddox CITY: Visalia DATA SOURCE:
463	20-23-10	SITE: Village Market ADDRESS: 4620 Avenue 228 CITY: Tulare DATA SOURCE:
464	21-27-10	SITE: Tri-Citrus ADDRESS: 23744 Avenue 181 CITY: Porterville 93257 DATA SOURCE:
465	18-25-30	SITE: Miller Memorial Chapel ADDRESS: 1120 West Goshen CITY: Visalia 93291 DATA SOURCE:
466	18-25-29	SITE: Beacon Oil Co. ADDRESS: 120 E. Mineral King CITY: Visalia 93291 DATA SOURCE:
467	20-27-32	SITE: Stark Packing Corp. ADDRESS: 22820 Avenue 196 CITY: Strathmore 93267 DATA SOURCE:
468	18-25-29	SITE: Town Center Car Wash ADDRESS: 303 West Court CITY: Visalia 93291 DATA SOURCE:
469	21-27-20	SITE: Porterville Irrigation ADDRESS: 22086 Avenue 160 CITY: Porterville 93257 DATA SOURCE:
470	21-28-35	SITE: Mobile ADDRESS: 30524 Highway 190 CITY: Porterville 93257 DATA SOURCE:
471	21-27-27	SITE: Chuck's Hula Car Wash ADDRESS: 1194 West Olive CITY: Porterville 93257 DATA SOURCE:

472	20-27-33	SITE: Strathmore Elementary School ADDRESS: 23020 Avenue 198 CITY: Strathmore 93267 DATA SOURCE:
473		SITE: Exxon Station ADDRESS: Burnett Road CITY: Tipton 93272 DATA SOURCE:
474	17-27-35	SITE: Lemon Cove - Cal Trans ADDRESS: Road 247 & Hwy. 198 CITY: Lemon Cove DATA SOURCE:
475	16-25-07	SITE: Orosi PUD ADDRESS: 12716 Avenue 416 CITY: Orosi DATA SOURCE:
476	23-27-02	SITE: Terra Bella Irrigation ADDRESS: 24790 Avenue 95 CITY: Terra Bella 93270 DATA SOURCE:
477	19-26-10	SITE: Tropicana Ranch ADDRESS: 400 West Pine CITY: Exeter 93221 DATA SOURCE:
478		SITE: Craftsman Homes ADDRESS: 438 North "M" CITY: Tulare 93247 DATA SOURCE:
479	21-24-13	SITE: Gilroy Foods ADDRESS: 16810 Avenue 184 CITY: Tulare 93274 DATA SOURCE:
480	18-24-19	SITE: Wallace Super Market ADDRESS: 30602 Road 68 CITY: Goshen DATA SOURCE:
481	19-24-15	SITE: Chevron USA ADDRESS: 26408 Highway 99 CITY: Tulare DATA SOURCE:
482	18-25-11	SITE: Tom Sanders Market ADDRESS: 27548 Road 148 CITY: Visalia DATA SOURCE:

483		SITE: City of Lindsay ADDRESS: 185 North Gale Hill CITY: Lindsay DATA SOURCE:
484	23-27-03	SITE: A. W. Coulter Trucking ADDRESS: 9371 Road 234 CITY: Terra Bella 93270 DATA SOURCE:
485		SITE: Kyle's Service Center ADDRESS: 265 Farmersville Blvd. CITY: Farmersville 93221 DATA SOURCE:
486	19-25-02	SITE: Visalia Unified School (Union School) ADDRESS: 28050 Road 148 CITY: Visalia 93277 DATA SOURCE:
487	20-25-05	SITE: Xavier Trucking ADDRESS: 13045 Avenue 232 CITY: Tulare DATA SOURCE:

APPENDIX E

CORRESPONDENCE REGARDING THE
DRAFT ENVIRONMENTAL IMPACT REPORT

APPENDIX F

RESPONSE TO COMMENTS

APPENDIX G

**SAMPLE HAZARDOUS
WASTE MANAGEMENT ORDINANCE**

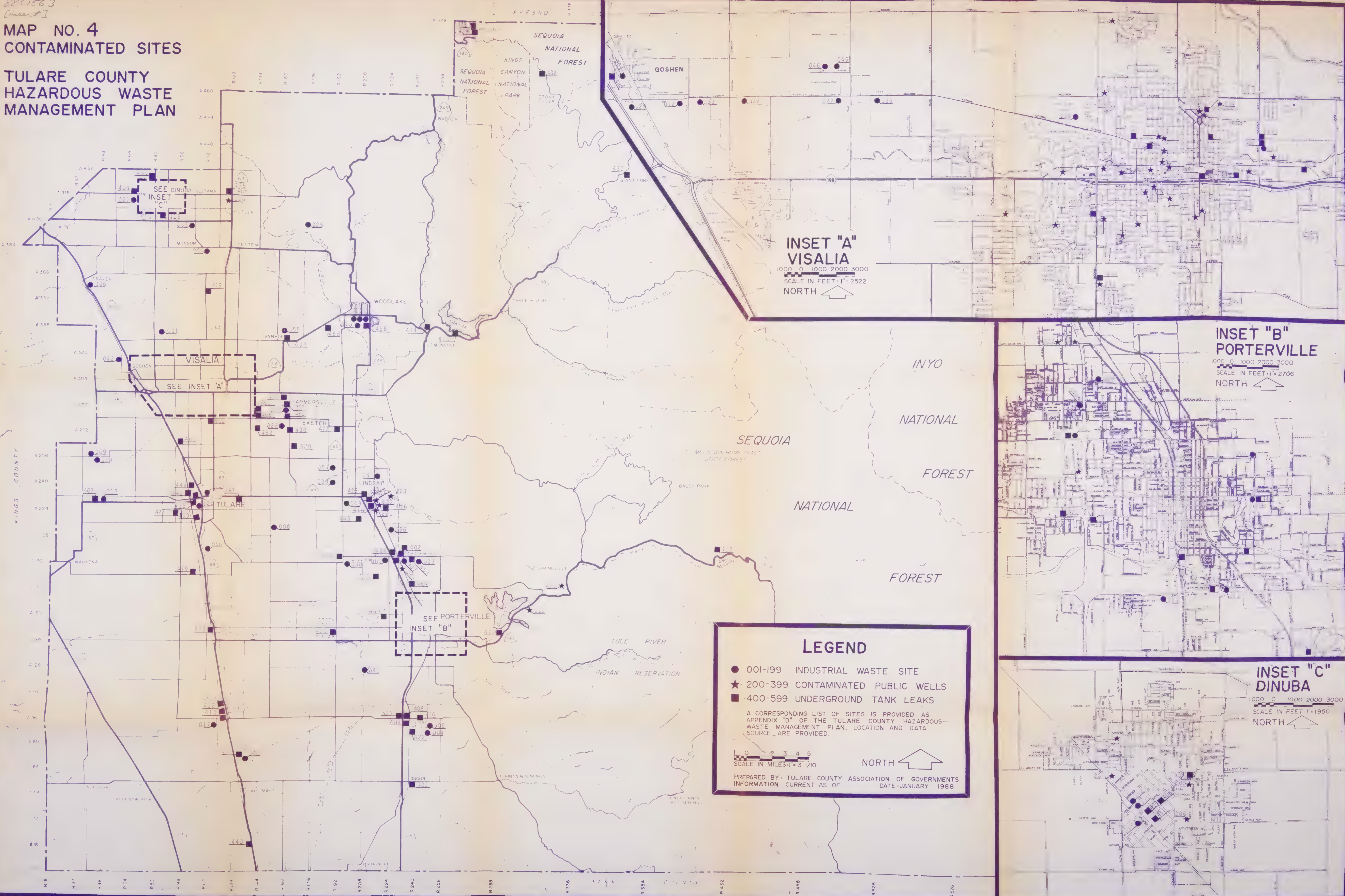
APPENDIX H

RESOLUTIONS OF

APPROVAL AND ADOPTION

MAP NO. 4
CONTAMINATED SITES

TULARE COUNTY
HAZARDOUS WASTE
MANAGEMENT PLAN

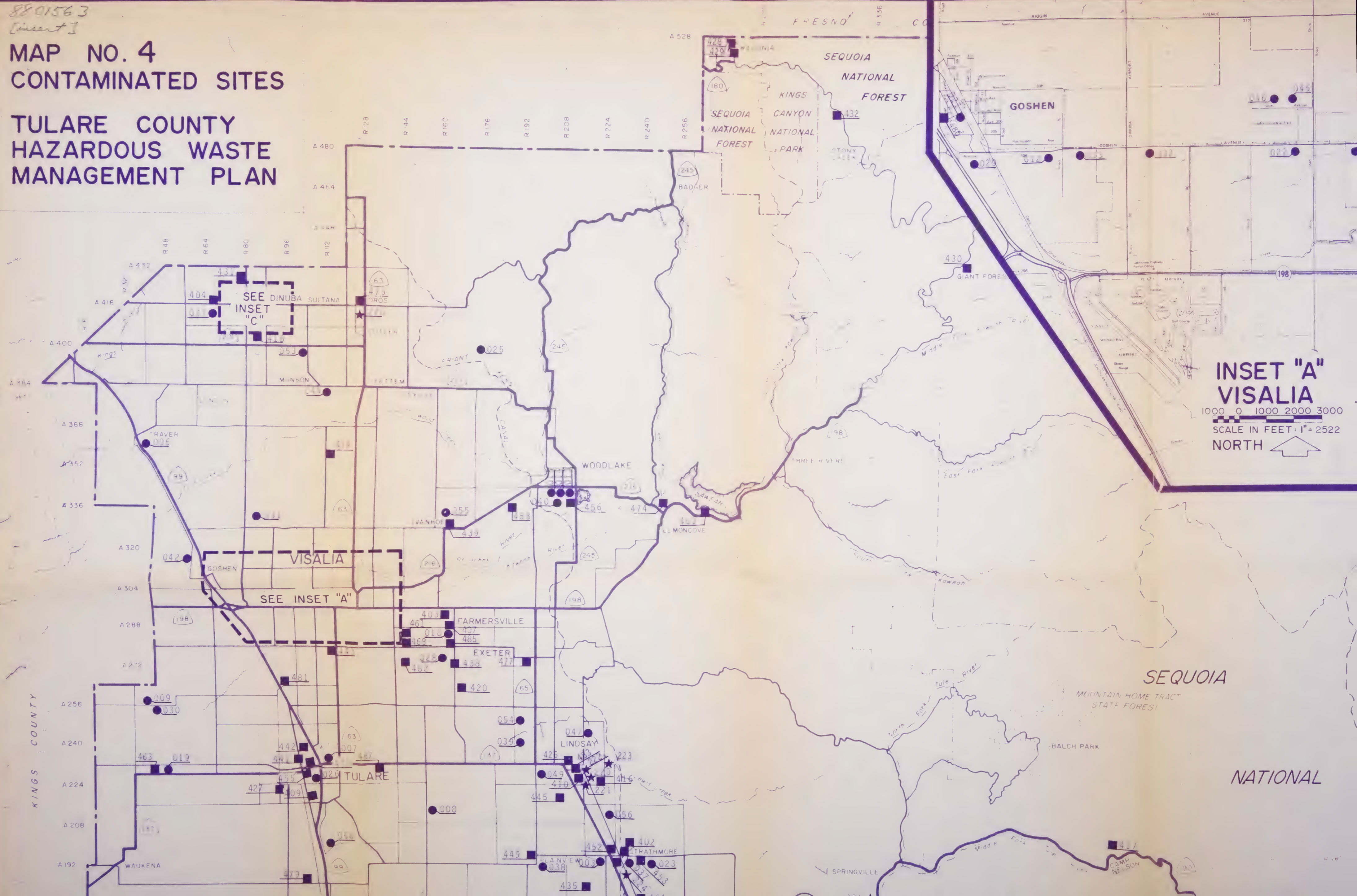


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[insert 1]

MAP NO. 4 CONTAMINATED SITES

TULARE COUNTY HAZARDOUS WASTE MANAGEMENT PLAN





SEQUOIA
NATIONAL
FOREST

GOSHEN

INSET "A"
VISALIA

1000 0 1000 2000 3000
SCALE IN FEET: 1" = 2522
NORTH

INSET "B"
PORTERVILLE

1000 0 1000 2000 3000
SCALE IN FEET: 1" = 2706
NORTH

INYO

NATIONAL

FOREST

SEQUOIA

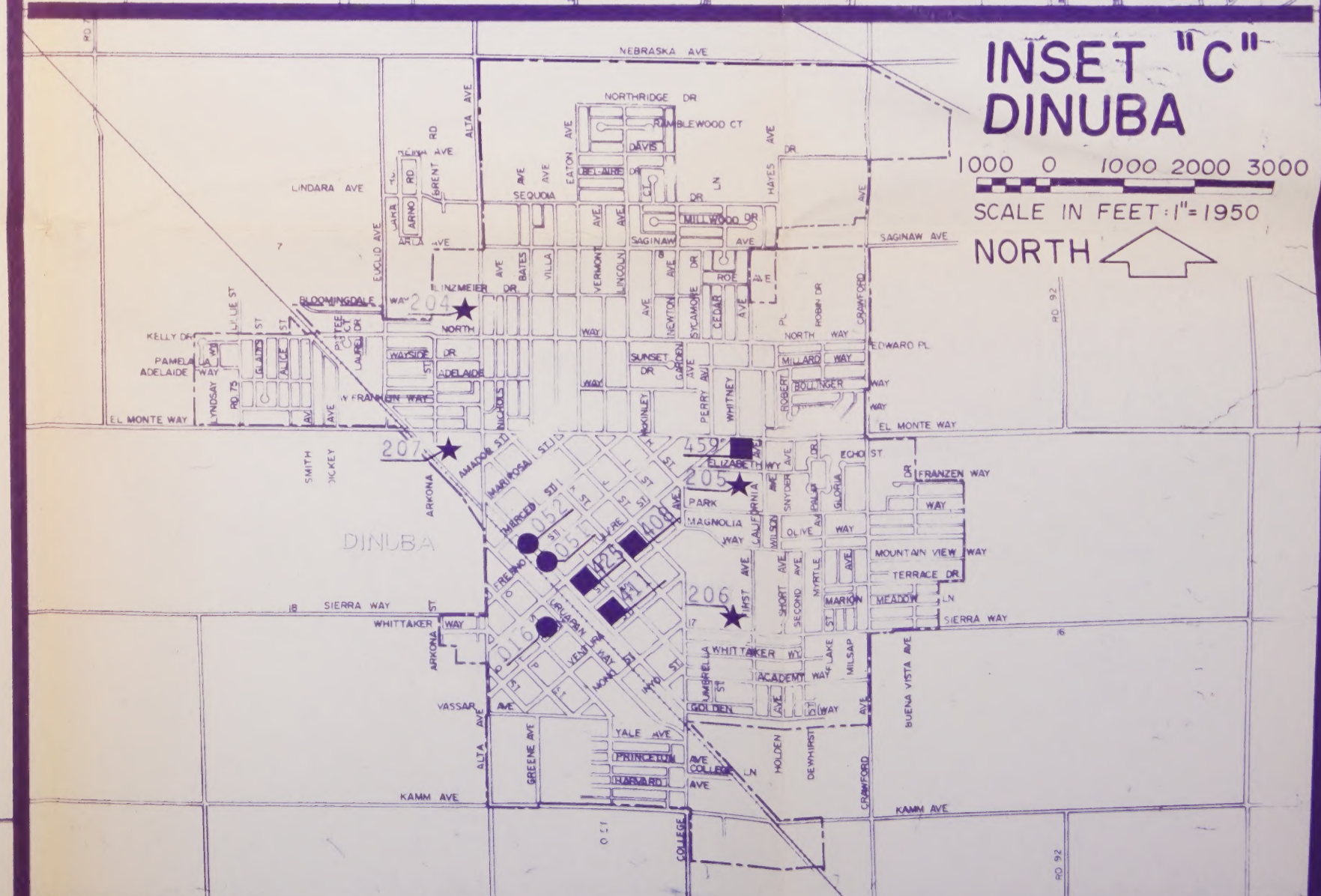
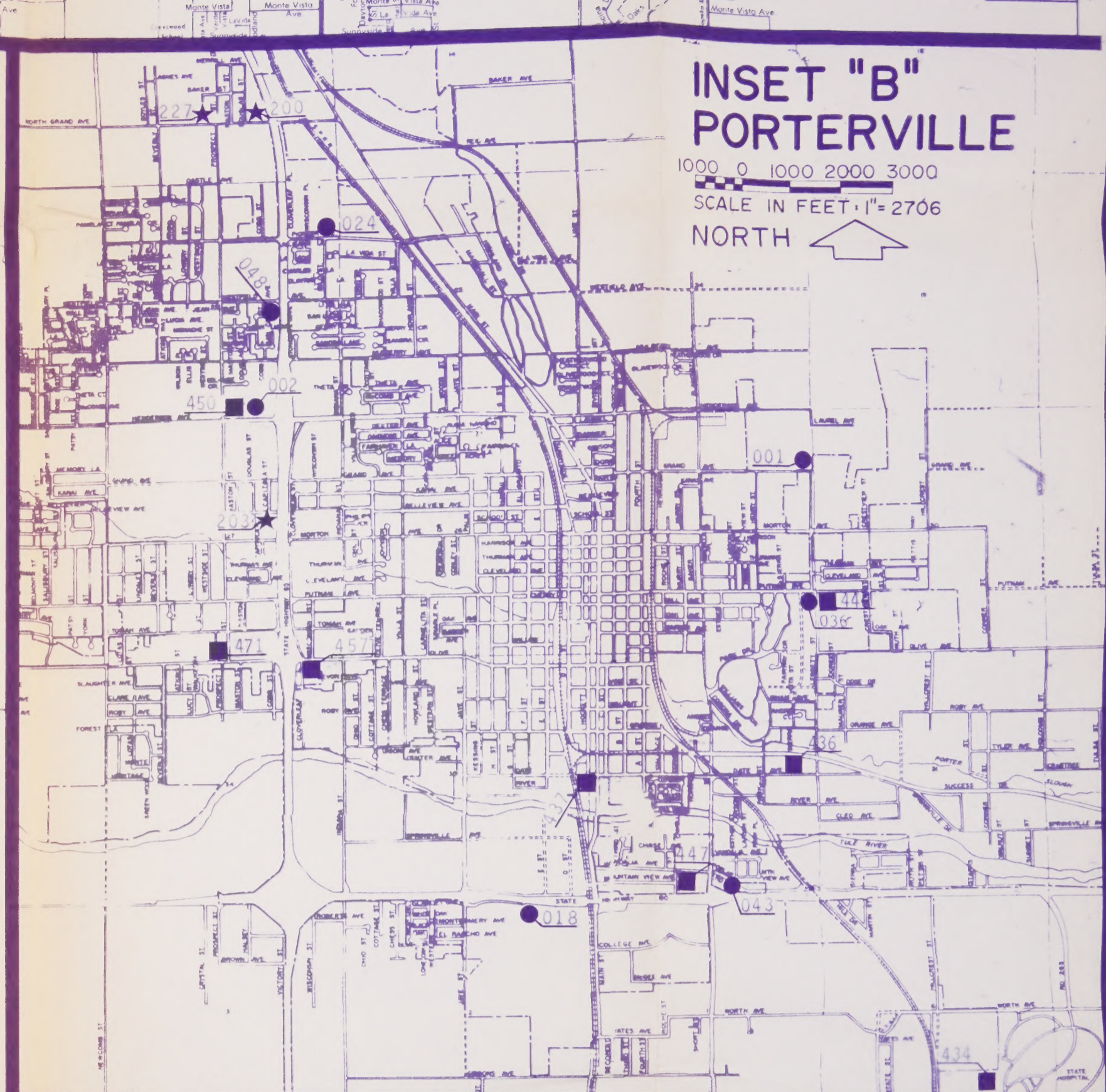
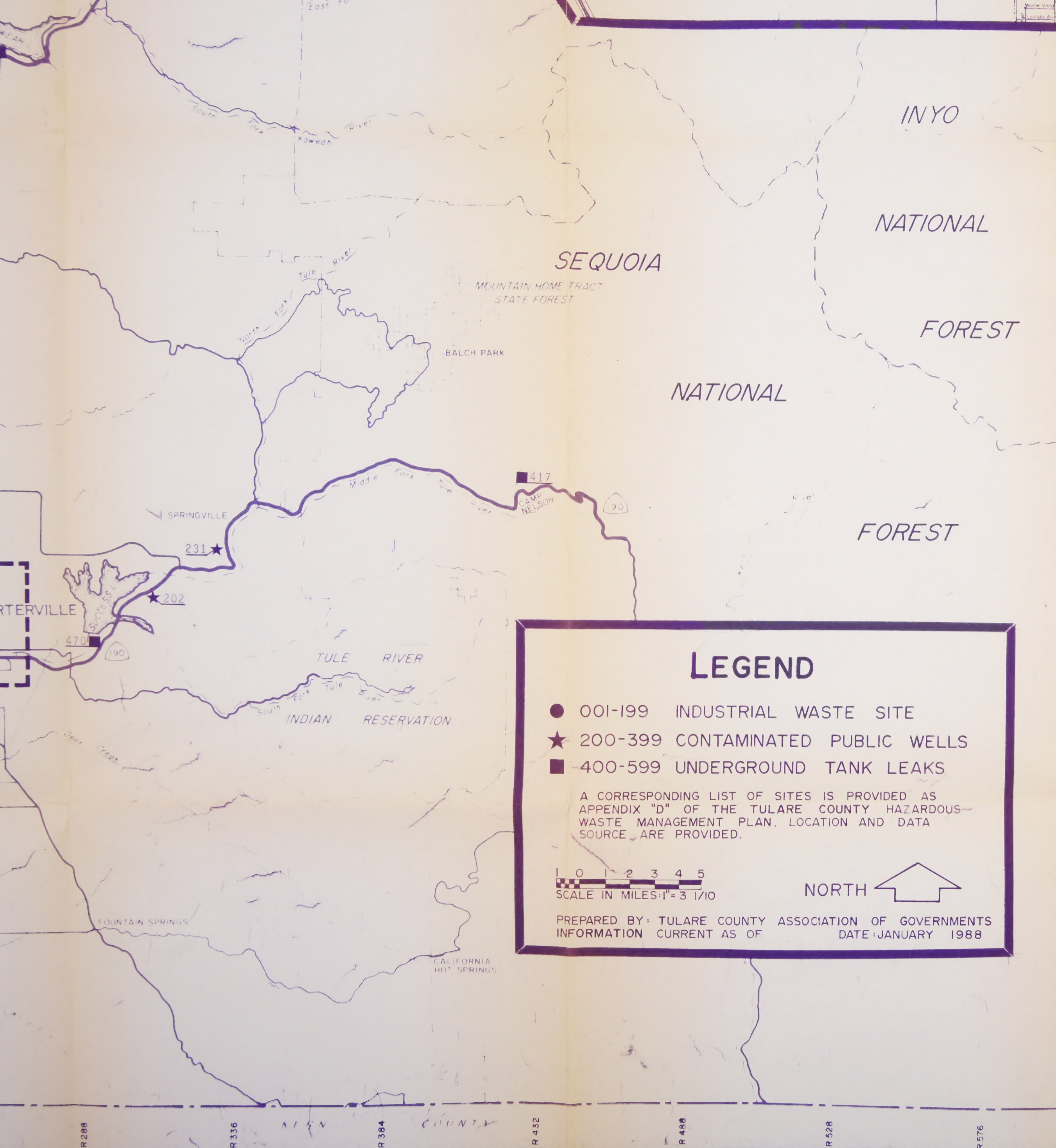
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